



PARCEL R7 & R13 – PHASE 2B OF THE SOUTH WOKINGHAM STRATEGIC
DEVELOPMENT LOCATION

DRAINAGE STATEMENT

MILLER HOMES

11 SEPTEMBER 2026





Abley Letchford
3 Tealgate
Charnham Park
Hungerford
RG17 0YT

T: 01488 684390
E: contact@ableyletchford.co.uk
W: www.ableyletchford.co.uk

Quality Management:

Prepared by:	Rebecca Fletcher
Authorised by:	Rebecca Fletcher
Date:	11 September 2026
Document Reference:	A389-R023D-R7 & R13

**COPYRIGHT © ABLEY LETCHFORD PARTNERSHIP LIMITED t/a
ABLEY LETCHFORD**

The material presented in this report is confidential. This report has been prepared for the exclusive use of MILLER HOMES within the terms of the contract and shall not be distributed or made available to any other company or person without the knowledge and written consent of Abley Letchford.

Any such party relies on the report at their own risk.



Contents

1.0 Introduction 1

2.0 Report Structure 3

3.0 Surface Water Drainage Strategy 4

4.0 Foul Water Drainage Strategy 8

5.0 Water Quality Enhancement 9

6.0 Adoption, Maintenance and Management 11

7.0 Summary 15

Appendices

- Appendix A – Proposed Drawings
- Appendix B – Sitewide Foul Drainage Strategy
- Appendix C – Surface Water Hydraulic Model Calculations



1.0 Introduction

1.1 Context

- 1.1.1 This report has been prepared by Abley Letchford on behalf of Miller Homes, to support the Reserved Matters application pursuant to Condition 1 attached to planning application 191068, for the erection of 215 dwellings.

Planning Context

- 1.1.2 The SDL site is an urban extension of Wokingham in Berkshire and is bisected by an existing railway line linking Wokingham and Bracknell. The SDL proposals comprise of approximately 2,500 homes, a new South Wokingham Distributor Road and other facilities such as two primary schools and a community centre.
- 1.1.3 Planning permission for the South Wokingham SDL has been granted by Wokingham Borough Council at different times for the various phases of the SDL.
- 1.1.4 The first phase of the South Wokingham SDL is located at Montague Park located in the north-east area of the South Wokingham SDL. This phase of development was granted planning permission (ref: O/2010/1712) and has been subsequently constructed and includes approximately 620 dwellings. A section of road between Montague Park heading south over the railway line to a new four arm roundabout with Waterloo Road was subsequently approved in 2019 (WBC Planning Reference: 172934) and constructed. The road over the railway line is named William Heelas Way and the new roundabout junction with Waterloo Road is known as the Eastern Gateway roundabout.
- 1.1.5 The second phase of the South Wokingham SDL is split into Phase 2a (WBC Planning Reference: 190914) and Phase 2b (WBC Planning Reference: 191068) and they are both located south of the railway line and include proposals for 215 and 1,434 dwellings respectively.
- 1.1.6 The new South Wokingham Distributor Road (SWDR) was approved in 2021 (WBC Planning Reference: 192928). It routes east to west through the larger Phase 2b parcel and will ultimately connect Finchampstead Road at the west to the Eastern Gateway roundabout.
- 1.1.7 Parcels R7 and R13 are located to the west of the Eastern Gateway roundabout and to the south of the South Wokingham Distributor Road.

1.2 Report Aims and Formation

- 1.2.1 This Reserved Matters Planning Application pertains to the R7 and R13 parcels, located in the centre of Phase 2b, to the east of Easthampstead Road and to the south of the South Wokingham Distributor Road. The proposal includes 215 residential dwellings, comprising a mix of 1 and 2-bedroom flats, as well as 2, 3, and 4-bedroom houses together with associated access and parking.



1.2.2 This report has taken cognisance from the original Flood Risk Assessment (FRA) carried out by WSP in August 2020, Ref: 70001684-FRA-SDL-001, and the Technical Note produced by Abley Letchford in January 2025 (A389-TN004E) submitted to discharge Condition 29, and presents a detailed drainage design to ensure that the guiding principles are upheld.

1.2.3 The aim of this Report is to propose a suitable drainage system for the R7 & R13 residential development parcel, to demonstrate compliance and discharge the conditions listed below:

Condition 30 – Reserved matters for each phase shall include details of SuDS to serve the phase, based on the approved SuDS strategy). SuDS shall be provided before occupation of the development it is to serve in accordance with the approved details and the phasing details pursuant to condition 3 and retained thereafter.

Reason: to prevent increased flood risk from surface water run-off in accordance with NPPF Section 14 (Meeting the Challenge of Climate Change, Flooding and Coastal Change); Core Strategy policy CP1; and Managing Development Delivery Local Plan policies CC09 and CC10 and Design principles 1d(ii) of the South Wokingham SDP SPD.

Condition 32 – Development shall not commence in each phase until details of any proposed points of connection, including connection into a drainage system or ordinary watercourse or third party land, have been submitted to and approved in writing by the Local Planning Authority and no discharge of surface water from the site shall be accepted into the public system until the drainage works have been completed in accordance with the approved details. The details shall demonstrate any connections onto third party land have the approval of the third party landowner and that the system immediately downstream is clear from obstruction.

Reason: to prevent increased risk of flooding, and to protect water quality in accordance with NPPF Section 14 (Meeting the Challenge of Climate Change, Flooding and Coastal Change), Technical guidance on the NPPF (Flood Risk), Core strategy policies CP1 & CP21; Managing Development Delivery Local plan policies CC09 & CC10; and the South Wokingham SDL SPD.

Condition 33 – Reserved matters for each phase of the development shall include measures for effective water quality treatment (using the methodology set out in the SuDS Strategy and Section 26.7 of the CIRIA SuDS Manual(C753) or any guidance that supersedes it) including phasing and measures shall be provided in accordance with the approved details.

Reason: to protect water quality in accordance with NPPF Section 14 (Meeting the Challenge of Climate Change, Flooding and Coastal Change, Technical Guidance on the NPPF (Flood Risk), Core Strategy policies CP1 & CP21; and the South Wokingham SDP SPD.

Condition 34 (ii)– Reserved matters shall be accompanied by a detailed exceedance flow routing plan consistent with the approved strategy.



2.0 Report Structure

2.1.1 This report addresses the following aspects:

- Section 2: Surface Water Strategy
- Section 3: Foul Water Strategy
- Section 4: Water Quality and enhancement
- Section 5: Adoption, Maintenance and Management
- Section 6: Summary

2.2 Basis of Report

2.2.1 Abley Letchford follows accepted procedures in providing professional services, but given the residual risk associated with any prediction and the variability which can be experienced in flood condition, Abley Letchford takes no liability for and gives no warranty against actual flooding of any property (client's or third party) or the consequences of flooding in relation to the performance of the service. This report has been prepared for the purposes of planning approval only and is to assist our client and the Local Planning Authority (LPA) to make an informed decision on the flood risks associated with the development of the Site under consideration.



3.0 Surface Water Drainage Strategy

3.1 Introduction

- 3.1.1 This chapter provides details on the proposed surface water drainage strategy and measures to drain the proposed 215 residential dwellings (R7: 38 dwellings and R13: 177 Dwellings).

3.2 Methodology

- 3.2.1 The proposed drainage strategy has been designed to meet the requirements of the NPPF by providing a drainage system which embraces the SuDS philosophy and key principals. The utilisation of Sustainable Drainage Systems (SuDS) not only provides the benefit of controlling waters at source and online treatment of collected surface water, but also allows enhanced aesthetics through improved landscaping, biodiversity, and ecological opportunities.
- 3.2.2 Additionally, the Drainage Strategy meets the requirements of Wokingham Borough Council's Standards and Guidance documents. References to how the scheme reflects the relevant individual National and Local Standards is included where appropriate.

3.3 Existing Drainage Conditions

- 3.3.1 The R7 & R13 parcels are predominantly a greenfield area which currently drains via infiltration and overland flows.

3.4 Sustainable Drainage Systems (SuDS)

- 3.4.1 Sustainable water management measures should be used to control the surface water runoff from the proposed development site therefore, managing the flood risk to the site and surrounding areas from surface water runoff.
- 3.4.2 Current guidance, CIRIA (2004) Report C609, provides that a hierarchy of techniques should be identified, namely:
- **Prevention** – the use of good site design and housekeeping measures on individual sites to prevent runoff and pollution (e.g., minimise areas of hard standing).
 - **Source Control** – control of runoff at or very near its source (such as the use of rainwater harvesting).
 - **Site Control** – management of water from several sub-catchments (including routing water from roofs and car parks to one/several large soakaways for the whole site).
 - **Regional Control** – management of runoff from several sites, typically in a detention pond or wetland.
- 3.4.3 In 2015, CIRIA published The SuDS Manual (C753) providing best practice guidance on the planning, design, construction, operation and maintenance of SuDS.
- 3.4.4 The SuDS Manual provides guidance to ensure SuDS are planned and designed to maximise the opportunities and benefits of surface water management.
- 3.4.5 The four main categories of benefits that can be achieved by SuDS, referred to as the four pillars of SuDS design, are:



- **Water quantity** – control the quantity of runoff to support the management of flood risk and maintain and protect the natural water cycle.
- **Water quality** – manage the quality of the runoff to prevent pollution.
- **Amenity** – create and sustain better places for people.
- **Biodiversity** – Create and sustain better places for nature.

3.5 Post Development Areas and Rates

- 3.5.1 To quantify any potential increase in surface water runoff, the existing Greenfield/Pre-Development runoff rate from the site must be determined. The rates of runoff have been established as part of the original Flood Risk Assessment (FRA) carried out by WSP in August 2020, Ref: 70001684-FRA-SDL-001. The proposed greenfield runoff rate (QBAR) is 4.4l/ha/s.
- 3.5.2 The total area of the proposed development is approximately 7.84ha and the impermeable area of the residential development is approximately 3.924ha.
- 3.5.3 To comply with best practice as stipulated in EA Report SC030219 'Rainfall Runoff Management for Developments', proposed discharge rates should be restricted for all storms up to and including the 1 in a 100-year storm event (1% AEP) plus a 40% allowance for climate change.

3.6 Surface Water Proposals and Rationale

- 3.6.1 As part of the Outline Permission, the approved Flood Risk Assessment (FRA) dated August 2020 by WSP (Ref: 70001684-FRA-SDL-001) provided a surface water drainage strategy generally dependant on a discharge rate of 4.4l/ha/s.
- 3.6.2 The approved FRA allowed for a different approach for Plot R7 and the local centre to the west with unattenuated discharge directly into the SWDR swale as attenuation for these plots was provided within the basin to be constructed in the SANG. Therefore, the drainage strategy for R7 included in this RM application, allows for unattenuated discharge to the SWDR swale.
- 3.6.3 The SWDR swale and attenuation basin is due to be delivered in advance of construction on the R7 site. Dwellings within R7 will not be occupied until the SWDR swale, attenuation basin and outfall to watercourse have been completed.
- 3.6.4 As part of the drainage strategy for R7 & R13 parcels, it is proposed to provide a network of pipes and Sustainable Drainage (SuDS) features to collect and attenuate the surface water runoff from the impermeable areas. The conventional drainage system will work in combination with SuDS such as rain garden/tree pits, swales and detention basins to provide attenuation storage and high-quality water benefits.
- 3.6.5 Refer to drawing A389-R7&R13-RM-501 in **Appendix A** for the drainage strategy.
- 3.6.6 Outputs from the hydraulic model are included in **Appendix C**.

R13 Basin Catchment

- 3.6.7 The R13 catchment drains to a basin situated in the north of the plot, immediately south of the SWDR.



- 3.6.8 The R13 catchment has an impermeable area of approximately 3.273ha. A 10% urban creep is included in these impermeable areas to account for future development of the proposed dwellings.
- 3.6.9 A flow control device on the outfall of the basin will restrict discharge to 14l/s prior to discharging to the SWDR swale. This discharge rate is the rate calculated in the approved site wide strategy submitted for discharge of planning condition 29.
- 3.6.10 Tree pits within the streets will act as bioretention areas.
- 3.6.11 Parking areas for the apartment blocks and houses are proposed to be lined permeable block paving to provide water quality benefits prior to discharging to the SWDR swale.
- 3.6.12 A swale has been incorporated along the western edge of the development to convey water towards the basin.
- 3.6.13 The manhole chambers of the proposed network will utilise strategic catchpits or proprietary devices, to minimize the amount of silt reaching the basins.
- 3.6.14 The proposed basin will be lined with a geomembrane and will provide attenuation only and not infiltration.
- 3.6.15 The basin has been designed in conjunction with the landscape architects to maximise its amenity value when not in use attenuating water. The public open space within which the basin is located has been defined as Parks and Gardens – the most formal landscape type.
- 3.6.16 The basin will have 1:3 side slopes, in accordance with the SuDS manual, and will incorporate 400mm freeboard above the maximum water level.
- 3.6.17 Large grass tiered steps have been incorporated on the eastern edge of the basin to facilitate access during dry periods.
- 3.6.18 A localised depression is proposed within the western part of the basin to provide a permanently wet area for increased ecological habitat.
- 3.6.19 Refer to drawing A389-R7&R13-RM-530 and 531 for cross section drawings of the basin and swale.

R7 Catchment

- 3.6.20 The R7 catchment includes approximately 0.651ha of impermeable area. A 10% urban creep is included in these impermeable areas to account for future development of the proposed dwellings.
- 3.6.21 Surface water from this plot will discharge via gravity, unattenuated into the SWDR swale, in accordance with the agreed site wide strategy. This is because the basin within the SANG to the west of the site has been sized to attenuate these flows.
- 3.6.22 SWDR have confirmed an allowance of 0.8ha impermeable area has been made for the R7 catchment in the SWDR drainage model.
- 3.6.23 Tree pits acting as bioretention areas are proposed along streets throughout the development parcel.



3.6.24 Parking areas for the apartment block and houses off the main spine road are proposed to be permeable block paving to provide water quality benefits prior to discharging to the SWDR swale.

3.6.25 The manhole chambers of the proposed network will utilise strategic catchpits or proprietary devices, to minimize the amount of silt reaching the basin.

3.7 Points of Connection

3.7.1 Attenuated flows from basin R13 will discharge to the SWDR swale to the north.

3.7.2 R7 will discharge to the SWDR swale to the north.

3.8 Exceedance Flood Routing

3.8.1 Storms in excess of the 1 in 100-year storm event (1% AEP) plus 40% climate change may flood from the network and will be kept within the internal road network, until such time as they can be directed into adjacent landscaping areas or existing vegetation/woodland.

3.8.2 Refer to drawing A389-R7&R13-RM-507 for the Exceedance Plan.

3.9 Safe Access

3.9.1 The site is located outside of the fluvial and surface water flood extents. Drawing A389-R7&R13-RM-509 shows the extent of the 1 in 100 year + 35% climate change fluvial event modelled by the SWDR team demonstrating the water is contained within the SWDR ditch along the northern edge of the development. Continuous safe access is therefore available during a flood event.



4.0 Foul Water Drainage Strategy

4.1 Introduction

- 4.1.1 This section provides details on the proposed foul water drainage strategy and measures to convey effluent. Refer to drawings A389-R7&R13-RM-501 in **Appendix A**.

4.2 Existing Drainage Conditions

- 4.2.1 No foul network is present in the area that the R7 and R13 residential development is proposed to be built.

4.3 Foul Water Drainage Strategy

- 4.3.1 Foul water from each residential plot will discharge via a gravity network to a pump station (PS2) located between parcels R7 and R13 which in turn will discharge to the pump station located with parcel R10 (PS1). This pump station then discharges to the Thames Water pump station in Montague Park to the north of the site. Refer to drawing A389-003 P9 for the sitewide foul drainage strategy overview in **Appendix B**.
- 4.3.2 The proposed foul water sewers and pump station have been designed in accordance with the new Sewerage Sector Guidance (SSG), British Standards and Building Regulations, and will be offered to a NAV (IWNL) for adoption under Section 104 Agreement of the Water Industry Act.

4.4 Point of connection

- 4.4.1 Foul drainage from both the R7 and R13 plot will discharge into pump station 2 (PS2) located between the two parcels. This will discharge to pump station 1 located within parcel R10.
- 4.4.2 R7 and R13 also makes allowance for the pumped flows from pump station 3, located further west and foul water from future parcels R8 and R9 to the North.



5.0 Water Quality Enhancement

- 5.1.1 CIRIA report C753 The SuDS Manual outlines the methodology for assessing water quality risks associated with new development. This is a simple index approach which provides a high-level scoping analysis of the land usage and gives guidelines for appropriate treatment stages.
- 5.1.2 This process identifies features necessary to provide adequate substance removal in line with Environment Agency requirements. This is a three-step process of Allocation, Mitigation and Review.
- 5.1.3 Surfaces generating runoff are ‘graded’ on their potential to contribute to various harmful pollutants and gives each surface a risk of pollution from each element. An extract of Table 26.2 within the SuDS Manual is set out in **Figure 1**.

Figure 1 – Extract from Table 26.2 SuDS Manual

Land Use	Pollution Hazard Level	Total Suspended Solids	Metals	Hydrocarbons
Residential Roofs	Very Low	0.2	0.2	0.05
Other Roofs	Low	0.3	0.2-0.8	0.05
Low traffic residential roads and non-residential parking with infrequent change.	Low	0.5	0.4	0.4
Commercial yard, parking with frequent change, other roads,	Medium	0.7	0.6	0.7
Sites with heavy pollution	High	0.8	0.8	0.9

- 5.1.4 Historically, PPG3 documentation would recommend that pollutants were removed utilising oil separators, but since its superseding, more recent guidance has shifted to the use of SuDS features to remove pollutants; thereby providing significant improvements in treatment.
- 5.1.5 The use of non-mechanical features decreases the requirements for maintenance and increase natural biodiversity. That said, the SuDS Manual does not remove the possibility of utilising separators, so long as they are considered in partnership with a comprehensive overall SuDS regime.
- 5.1.6 Without adequate treatment, the pollutants would cause damage if they were to enter the watercourse or water table in large volumes. The use of SuDS features to slow down and degrade these pollutants is critical to the provision of an acceptable discharge.
- 5.1.7 The proposed residential development is classified between “Very Low” and “Medium” in accordance with the Pollution Hazard Level, which equals to Total Suspended Solids: 0.7, Metals: 0.6 and Hydrocarbons: 0.7 for “Medium” and Total Suspended Solids: 0.5, Metals: 0.4 and Hydrocarbons: 0.4 for “Low”.
- 5.1.8 The respective cleansing abilities of common SuDS features are given by corresponding mitigation indices within the SuDS Manual. An extract of Table 26.3 is set out below and is set out in **Figure 2**.



Figure 2 – Extract from Table 26.3 SuDS Manual

Type of SuDS component	Total Suspended Solids	Metals	Hydrocarbons
Filter strip	0.4	0.4	0.5
Filter Drain	0.4	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable Paving	0.7	0.6	0.7
Detention Basin	0.5	0.5	0.6
Pond	0.7	0.7	0.5
Wetland	0.8	0.8	0.8

5.2 R13

- 5.2.1 Parking courts for apartment blocks are proposed to have lined permeable paving. The mitigation indices stated above provide sufficient treatment for the likely pollutants outlined in Figure 1.
- 5.2.2 Rain gardens within the road corridors will act as bio retention areas providing treatment for the roads within the development.
- 5.2.3 Run off from residential roofs discharging directly to the piped network will receive a level of treatment within the detention basin prior to discharge to the SWDR swale.

5.3 R7

- 5.3.1 Parking courts for apartment blocks and houses located off the main spine road are proposed to have lined permeable paving. The mitigation indices stated above provide sufficient treatment for the likely pollutants outlined in Figure 1.



6.0 Adoption, Maintenance and Management

6.1.1 This section of the strategy considers the maintenance requirements of the drainage provisions during the construction phase and post construction phase of the development lifecycle.

6.2 Construction Phase

6.2.1 During the construction phase, the Developer will be responsible for all surface water matters especially water quality and pollution control. They or their Principal Contractor will develop a Construction Surface Water Management Plan (CSWMP) based on the CIRIA best practice guidance listed below. The aim of the CSWMP is to ensure the risk of flooding on and off site is not increased due to construction activities, and that quality of receiving water bodies is not impacted by construction activities.

6.2.2 CIRIA C532 Control of Water Pollution from Construction Sites and CIRIA C753 The SuDS Manual provide specific measures for the protection of surface water quality during construction activities, including:

- Management of construction works to comply with the necessary surface water quality standards and any consent conditions from planning approval.
- Surface water run-off from the road will be managed through a temporary and/or permanent drainage infrastructure, including measures for removing suspended solids and potential contaminants.
- Plant machinery and vehicles to be maintained in a good working condition, with wheel washing and dust suppression measures at all entry and exit points used to prevent the migration of pollutants (particularly in relation to works using concrete and with areas where dust and mud can build up);
- Areas at risk of spillage will be carefully sited and protected (e.g., bunds and impervious walls and floor) to minimise the risk of hazardous substances affecting surface water quality – this may include vehicle maintenance and storage areas for hazardous materials.
- The movement of plant machinery and vehicles and the storage of materials during the construction works will be limited near to surface water features.
- Excavation activities will carefully be monitored and coordinated with forecasted dry periods, where possible, with excavation works covered during periods of heavy rain to minimise the entry and collection of rainwater and transport of pollutants; and
- The movement of plant and machinery over bare soil areas will be limited to avoid soil compaction and smearing, with suitable preparatory works included where this cannot be avoided so as to minimise effects on the surface water runoff regime.

6.2.3 The CSWMP will identify the key activities being undertaken on the site and how run off will be managed both in terms of quantity – directed to suitable areas to reduce flood risk, and quality – ensuring treatment is provided prior to discharging to water courses or sewers.



- 6.2.4 Temporary onsite drainage facilities will be provided during the construction phase to ensure the controlled discharge of surface water run-off, until such a time as the permanent surface water drainage strategy is implemented.

6.3 Post Construction Phase

- 6.3.1 Whilst the drainage system has been designed to the appropriate standards including Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England ("the Code", 2021), the Building Regulations and the requirement of the National Planning Policy Framework, ongoing maintenance will be required to all drainage elements.

Surface Water Adoption

- 6.3.2 The onsite main drainage provision, including traditional sewers and manholes will be offered to IWNL for adoption under Section 104 of the Water Industry Act. Ultimately these assets will become owned and maintained in perpetuity by IWNL upon vesting.
- 6.3.3 The basin and swale, which are located the within public open space, will be offered to Wokingham Borough Council for adoption, along with rain gardens and drainage associated with adopted roads.
- 6.3.4 Smaller private drains and manholes within dwelling curtilages will be conveyed to purchasers, wherein responsibility for ongoing maintenance will lie with the homeowner.

Foul Water Adoption

- 6.3.5 The onsite main drainage provision including traditional sewers and manholes, and the pump station between parcel R7 and R13, will be offered to IWNL for adoption under Section 104 of the Water Industry Act. Ultimately these assets will become owned and maintained in perpetuity by IWNL upon vesting.
- 6.3.6 Smaller private drains and manholes within dwelling curtilages will be conveyed to purchasers, wherein responsibility for ongoing maintenance will lie with the homeowner.

SuDS Feature Maintenance

- 6.3.7 Regular maintenance/replacement of the fundamental SuDS features and associated drainage assets requires careful consideration.
- 6.3.8 Rain garden/tree pits/bioretenion areas will be maintained by Wokingham Borough Council as highway features with the SUDS basins also maintained by Wokingham Borough Council as part of the open space.
- 6.3.9 Tables 1 and 2 identify the recommended maintenance schedule for the various SUDS features.



Table 1: Maintenance Schedule for Detention Basins

Maintenance Schedule	Required action	Frequency
Regular Maintenance	Remove litter and debris	Monthly
	Cut grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect inlets, outlets, and overflows for blockages, and clear if required	Monthly
	Inspect bank sides, structures, pipework etc for evidence of physical damage	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies	Monthly (for first year) then annually or as required
	Check any penstocks and other mechanical devices	Annually
	Tidy all dead growth before start of growing season	Annually
	Remove sediment from inlets, outlets, and forebays	Annually (or as required)
	Manage wetland plants in outlet pool – where provided	Annually
Occasional Maintenance	Reseed areas of poor vegetation growth	As required
	Prune and trim any trees and remove cuttings	Every two years, or as required
	Remove sediment from inlets, outlets, forebays, and main basin when required.	Every five years, or as required (likely to be minimal requirements where effective upstream source control is provided)
Remedial actions	Repair erosion or other damage by reseeding or re-turfing	As required
	Realignment of rip-rap	As required
	Repair/rehabilitation of inlets, outlets, and overflows	As required
	Re-level uneven surfaces and reinstate design levels	As required
Monitoring	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly/after large storms.



Table 2: Maintenance Schedule for Tree Pits/Bio-retention Areas

Maintenance Schedule	Required action	Frequency
Regular Inspections	Inspect infiltration surface for silting and ponding, record dewatering time of the facility and assess standing water levels in under-drain (if appropriate) to determine if maintenance is necessary	Quarterly
	Check operation of under-drains by inspection of flows after rain	Annually
	Assess plants for disease infection, poor growth, invasive species etc. and replace as necessary	Quarterly
	Inspect inlets and outlets for blockages	Quarterly
Regular Maintenance	Remove litter and surface debris and weeds	Quarterly (or more frequently for tidiness or aesthetic reasons)
	Replace any plants, to maintain planting density	As required
	Remove sediment, litter, and debris buildup from around inlets or from forebays	Quarterly to biannually
Occasional Maintenance	Infill any holes or scour in the filter medium, improve erosion protection if required	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and replacing mulch	As required
Remedial actions	Remove and replace filter medium and vegetation above	As required
Monitoring	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly/after large storms
	Inspect infiltration surfaces for ponding. Record dewatering time of the facility to determine if maintenance is necessary.	Monthly, or when required
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Half yearly
	Test planting soil for pH – if adjustment is necessary, amalgamate with appropriate substances.	Annually



7.0 Summary

- 7.1.1 In accordance with the Flood Risk Assessment (FRA) dated August 2020 and produced by WSP (Ref: 70001684-FRA-SDL-001), as part of the Outline Permission, a discharge rate of 14l/s has been adopted for plot R13.
- 7.1.2 For plot R7, an unattenuated discharge has been used, in accordance with the WSP FRA.
- 7.1.3 Discharge points from the site are into the proposed SWDR swale located to the north of the developments.
- 7.1.4 The Drainage Strategy encompasses SuDS to mitigate and manage surface water flows from the proposed residential development in parcels R7 and R13.
- 7.1.5 The proposed surface water drainage strategy will manage the flood risk posed by uncontrolled surface water runoff from the residential development. Any increase in surface water run-off can be managed using SuDS as well as attenuation features to provide storage in extreme storm events.
- 7.1.6 The site is located outside of the fluvial and surface water flood extents. Continuous safe access is therefore available during a flood event.
- 7.1.7 All the water quality parameters have been considered to enhance the water quality of the proposed surface water network in accordance with The SuDS Manual 2015 (C753).
- 7.1.8 Surface water attenuation for all storm events is provided within the proposed surface water drainage network for all storm events up to and including the 1 in 100-year storm event (1% AEP) plus the allowance for a 40% increase in rainfall intensities as a result of climate change.
- 7.1.9 A gravity-based foul water network is proposed as for the site, discharging to a pump station located between R7 and R13. This in turn pumps to the gravity network in R11 and on to the pump station within R10. Flows from the pump station in R10 are discharged to the existing Thames Water Montague Park SPS. Both the network and the foul pumping station will be offered to IWNL for adoption.
- 7.1.10 The proposed residential development complies with national and local planning policy in response to flood risk. The risk of flooding is adequately managed, and the offsite flood risk is not increase.
- 7.1.11 The proposed residential development is therefore deemed appropriate in this location in terms of flood risk and drainage.



Appendices



Appendix A – Proposed Drawings

A389-R7&R13-RM-501 Drainage Strategy

A389-R7&R13-RM-505 Surface Water Catchment Plan

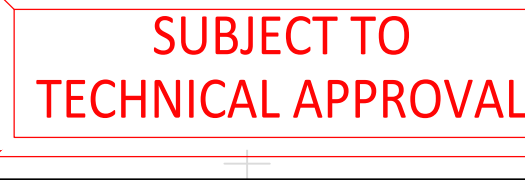
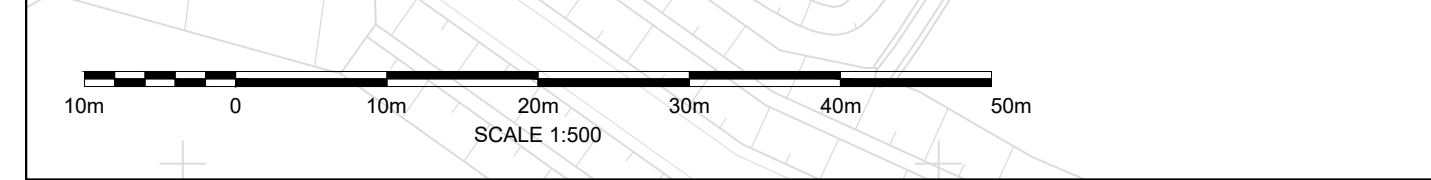
A389-R7&R13-RM-506 Foul Water Catchment Plan

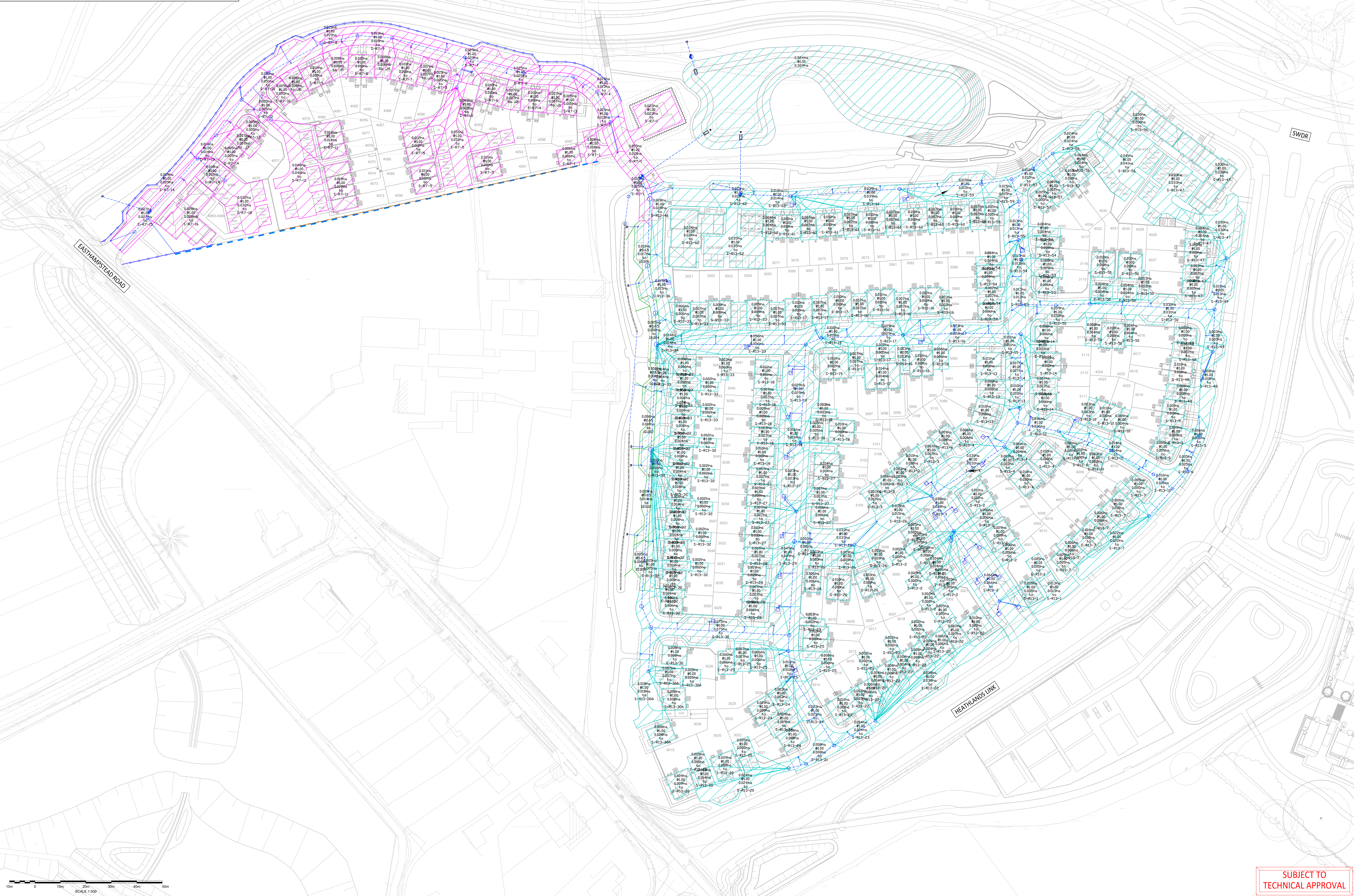
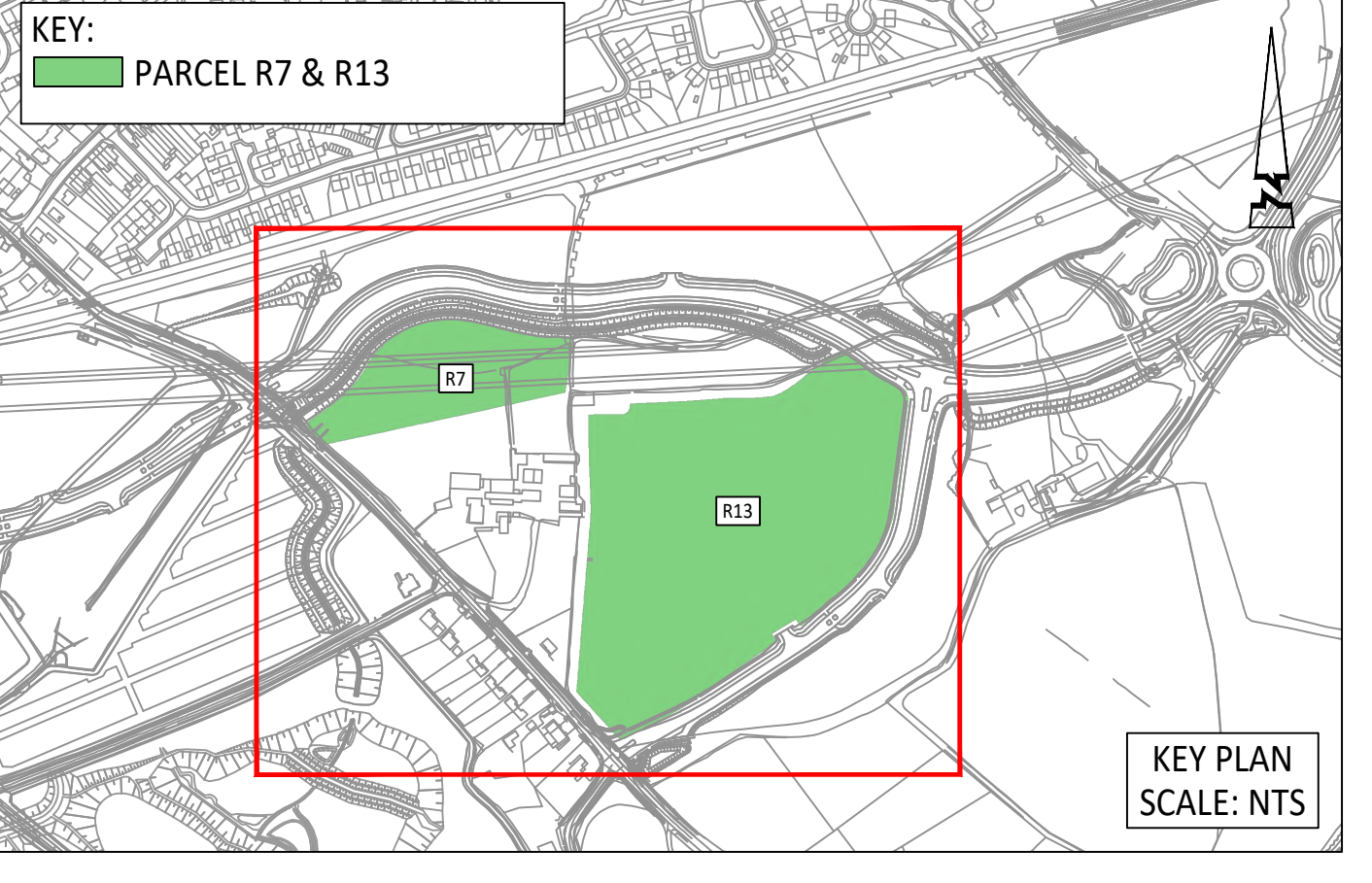
A389-R7&R13-RM-507 Exceedance Routing plan

A389-R7&R13-RM-509 Drainage Strategy with Fluvial Flood Extent

A389-R7&R13-RM-530 Basin Cross Sections

A389-R7&R13-RM-531 Swale Cross Sections

[illegible]



© ABLE LETCHFORD PARTNERSHIP LTD.
This drawing should not be reproduced without consent.

NOTES:

- Do not scale.
- This drawing is to be read in conjunction with and checked against all other drawings. Engineering details, Specification and any structural, Geotechnical or other specialist document provided.
- Any anomaly or contradiction between any of the above is to be reported to the Engineer.

Key

- Proposed adoptable sewer & MH
- Highway gully and 150mmØ connection
- Proposed Control Manhole
- Proposed Catchpit Manhole
- Proposed H50C Headwall
- Proposed Headwall
- Proposed French Drain
- R7 Catchment Area
- R13 Catchment Area
- Total Impermeable area - 0.651ha
- Total Impermeable area - 3.273ha

Rev	Description	By	Check
E 10.24	CATCHMENTS UPDATED	RF	RF
D 07.24	AMENDED TO SUIT UPDATED LAYOUT	AS	RF
B 05.24	AMENDED TO SUIT UPDATED LAYOUT	RF	RF
A 12.24	FIRST ISSUE	AD	RF

Scale

1:500 @ A0

Date

DEC 2025

Drawn

AS

Checked

RF

Project

SOUTH WOKINGHAM SDL
PHASE 2B R7 & R13 RESERVED
MATTERS APPLICATION

Surface Water
CATCHMENT PLAN

Client

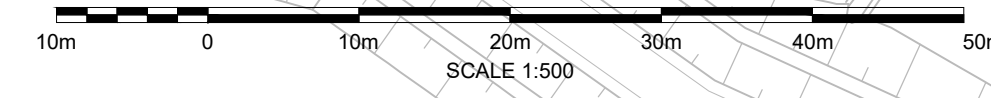
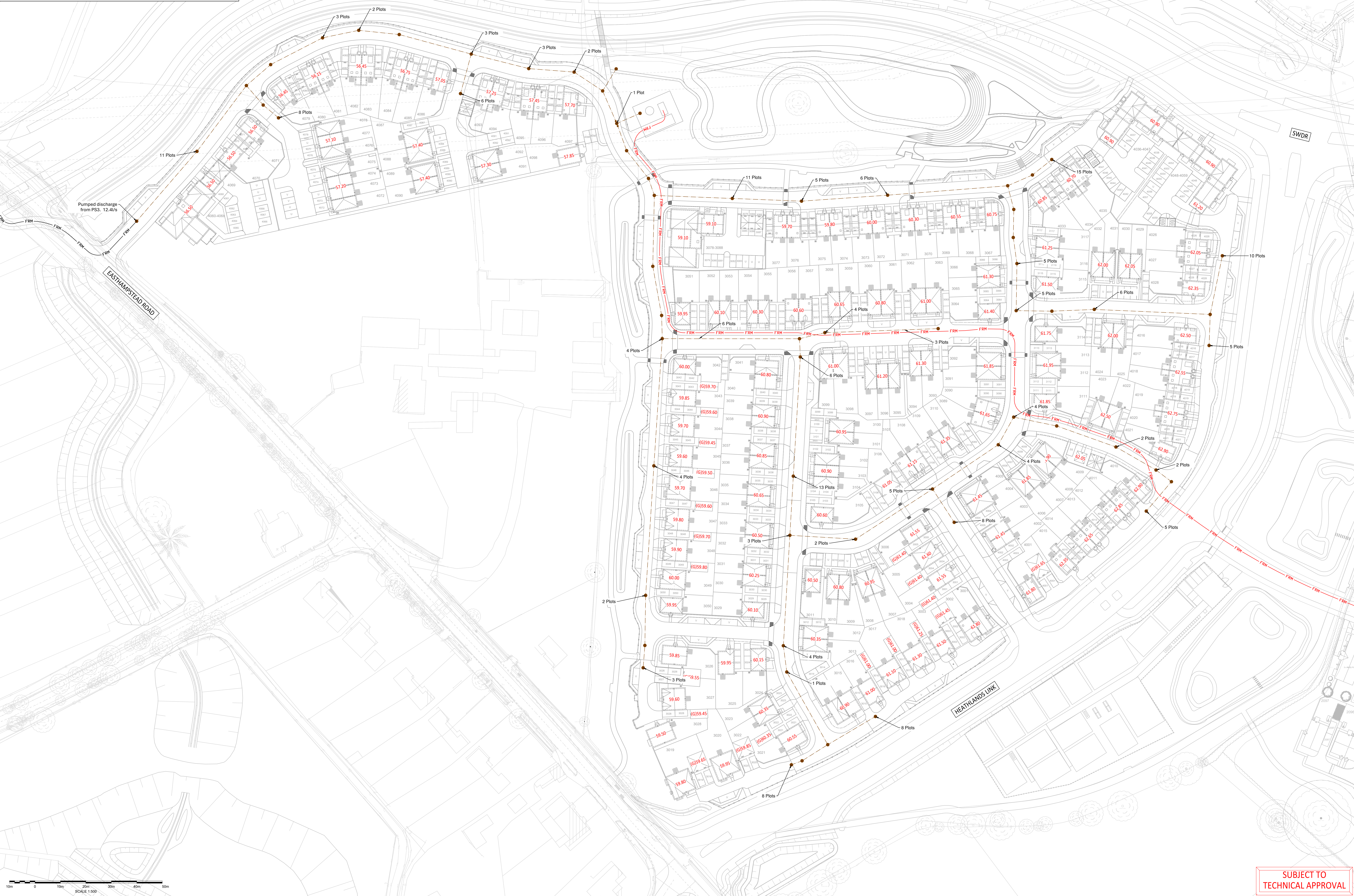
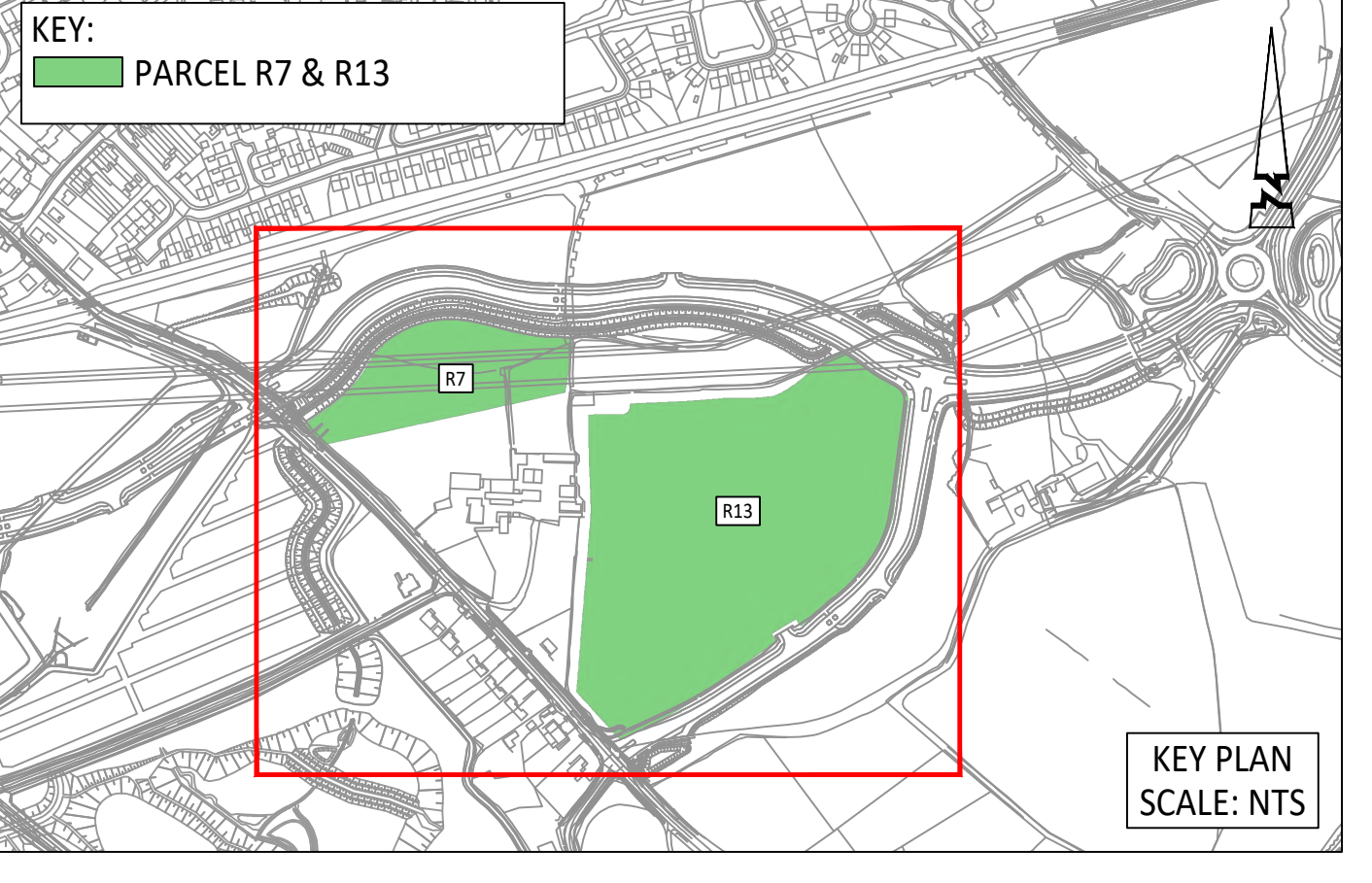
MILLER HOMES

Company

Able Letchford
www.ableletchford.co.uk

Subject to
TECHNICAL APPROVAL

A389-R7&R13-RM-505



**SUBJECT TO
TECHNICAL APPROVAL**

© ABLEY LETCHFORD PARTNERSHIP LTD.
This drawing should not be reproduced without consent.

NOTES:
1. Do not scale.
2. This drawing is to be read in conjunction with and checked against all other drawings, Engineering details, Specification and any structural, Geotechnical or other specialist document provided.
3. Foul water discharge is based on 4000l/s per plot.
4. Catchment numbers refer only to parcels under current RM application.

KEY:
—●— Proposed adoptable sewer & MH
— FRW — Proposed PS3 Foul Water Rising Main
— FRM — PS3 Foul Water Rising Main
— 42.50 — Finished Floor Level

D	27.24	AMENDMENTS TO SLAT UPDATED LAYOUT	GL	RF
B	25.24	AMENDMENTS TO SLAT UPDATED LAYOUT	RF	RF
A	12.24	FIRST ISSUE	AD	RF

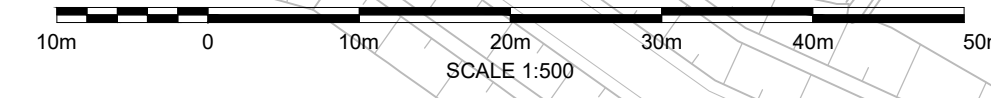
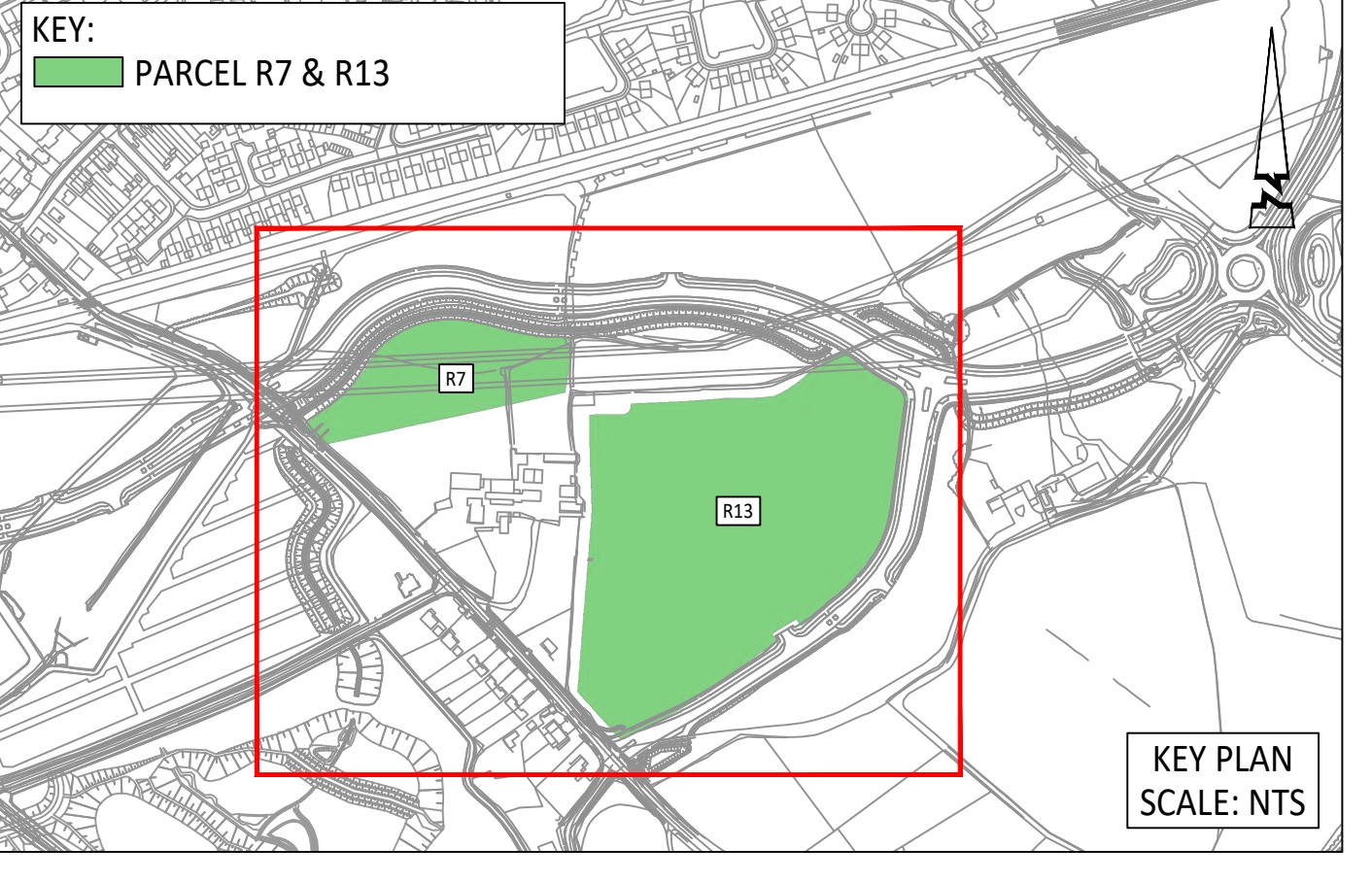
www.ableyletchford.co.uk

Client
MILLER HOMES

Project
**SOUTH WOKINGHAM SDL
PHASE 2B R7 & R13 RESERVED
MATTERS APPLICATION**

**FOUL WATER
CATCHMENT PLAN**

Scale	1:500 @ A0	Date	DEC 2025	Drawn	AS	Checked	RF	
Drawing No	A389-R7&R13-RM-506						Revision	D



© ABLEY LETCHFORD PARTNERSHIP LTD.
This drawing should not be reproduced without consent.

GENERAL ARRANGEMENT NOTES:

- Do Not Scale.
- This Drawing is to be read in conjunction with and checked against all other drawings. Engineering details, specification and any structural, Geotechnical or other specialist document provided.
- Any anomaly or contradiction between any of the above is to be reported to the Engineer.

KEY:

- Proposed Highway Contours
- Exceedance Flow Route Arrow
- HP Exceedance Flow Route High Point
- LP Exceedance Flow Route Low Point

D	27.24	AMENDED TO SUIT UPDATED LAYOUT	GL	RF
B	25.24	AMENDED TO SUIT UPDATED LAYOUT	RD	RF
A	12.24	FIRST ISSUE	AD	RF

Client: **Miller Homes**

Project: **SOUTH WOKINGHAM SDL
PHASE 2B R7 & R13 RESERVED
MATTERS APPLICATION**

Title: **EXCEEDANCE ROUTE PLAN**

Scale:

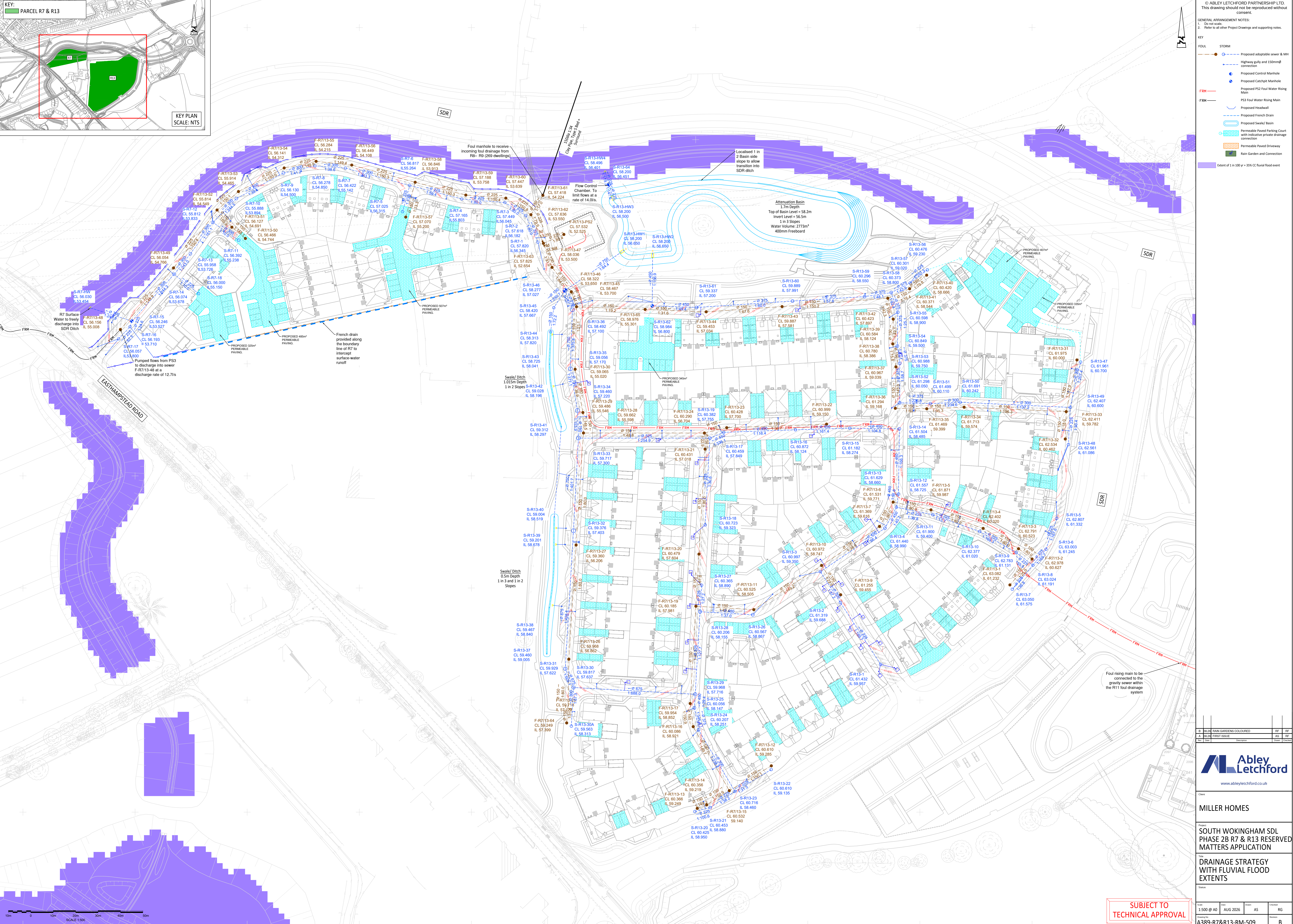
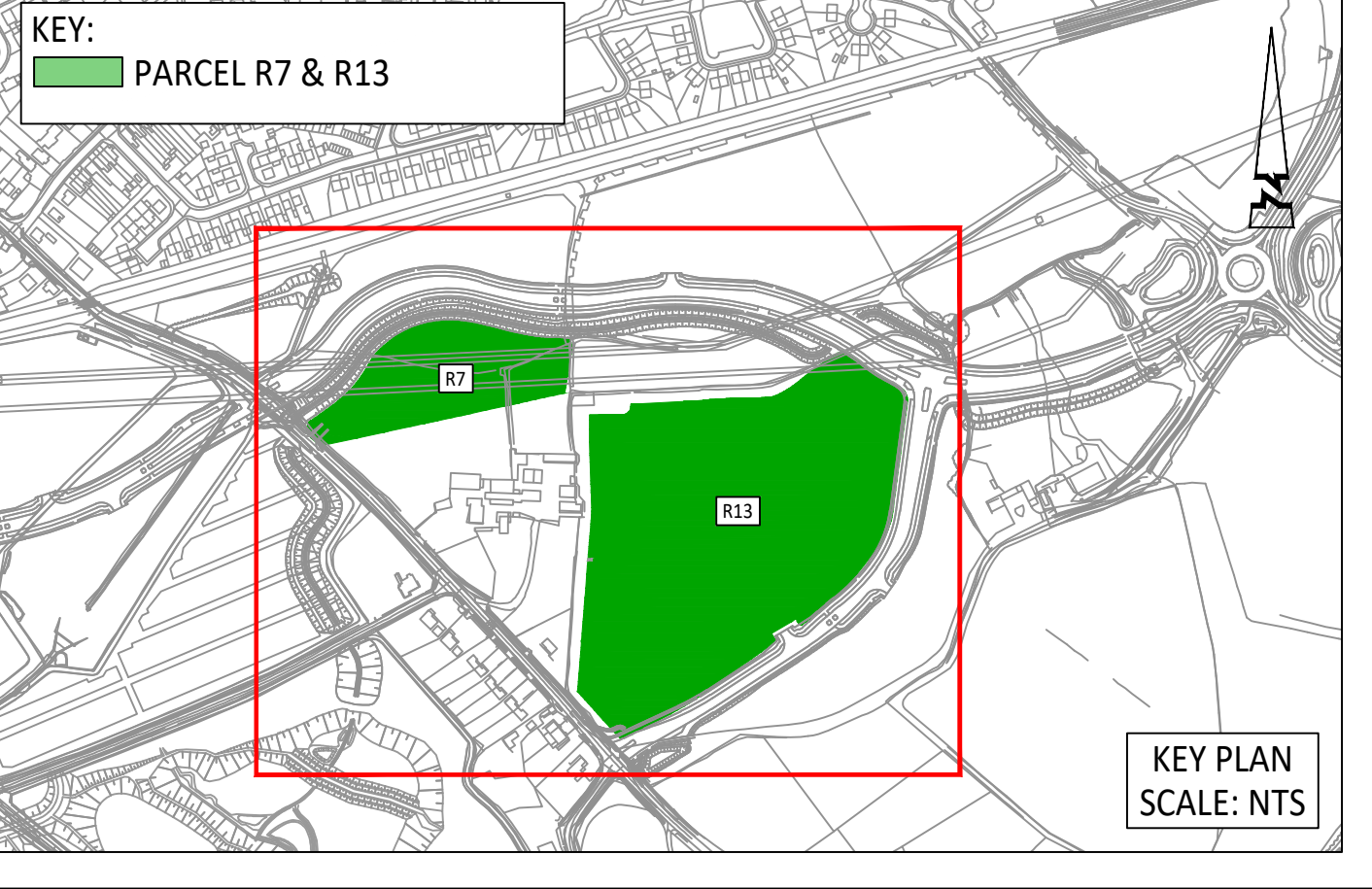
Scale	Date	Drawn	Checked
1:500 @ A0	DEC 2025	AS	RF

Drawing No: **A389-R7&R13-RM-507**

Revision: **D**

**SUBJECT TO
TECHNICAL APPROVAL**

Abley Letchford
www.ableyletchford.co.uk



© ABLE LETCHFORD PARTNERSHIP LTD.
This drawing should not be reproduced without consent.

GENERAL ARRANGEMENT NOTES:
1. Do not scale.
2. Refer to all other Project Drawings and supporting notes.

KEY

FOUL

STORM

Proposed foul sewer & MH
Proposed storm sewer & MH
Proposed Control Manhole
Proposed Catchpit Manhole
Proposed P52 Foul Water Rising Main
Proposed P53 Foul Water Rising Main
Proposed French drain
Proposed Swale/Basin
Permeable Paved Parking Court with Indicative Private Drainage Connection
Permeable Paved Driveway
Rain Garden and Connection
Extent of 1 in 100 yr + 35% CC flood risk event

Rev	Description	By	Rev
B	50.24 MAIN GARDENS COLOURED	RP	RP
A	50.24 FIRST ISSUE	AD	RP
1	Issue	AD	RP

Issue

1:500 @ A0

AUG 2026

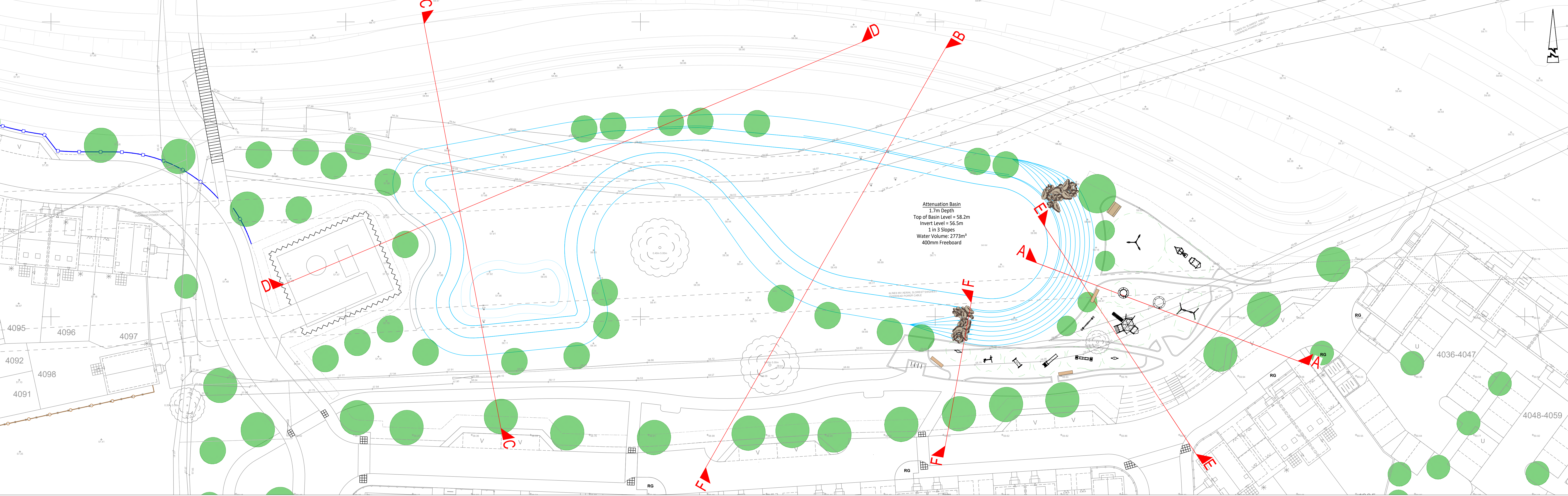
AS

RG

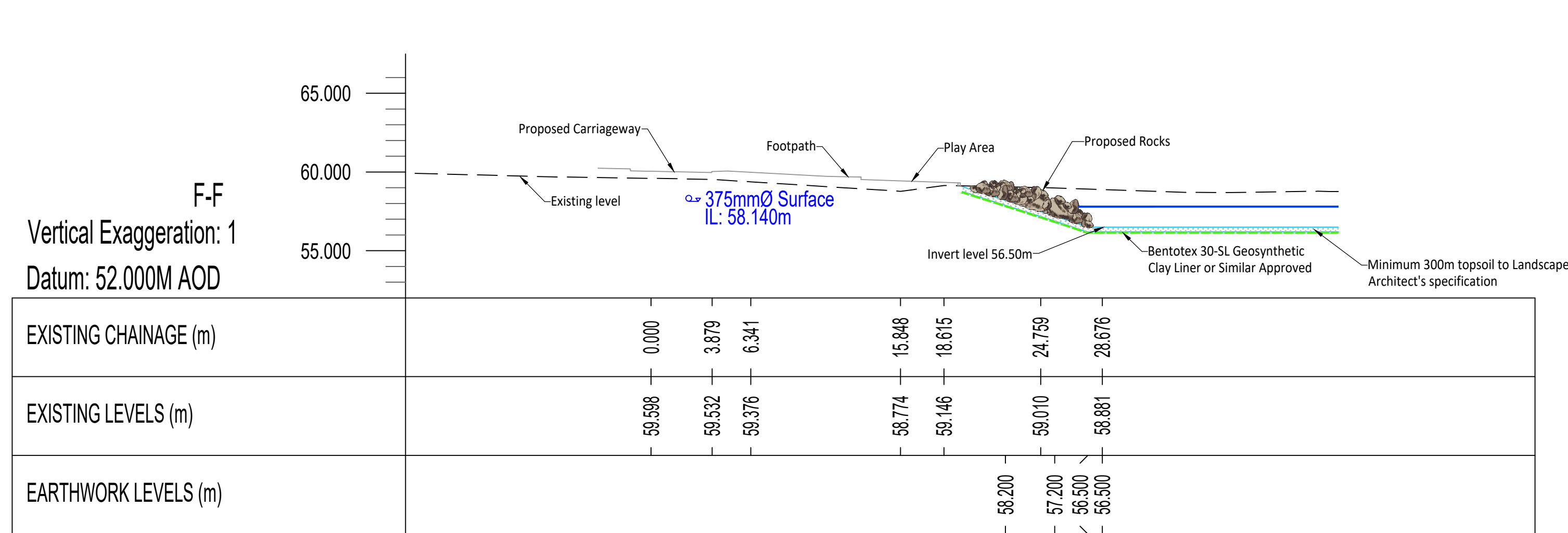
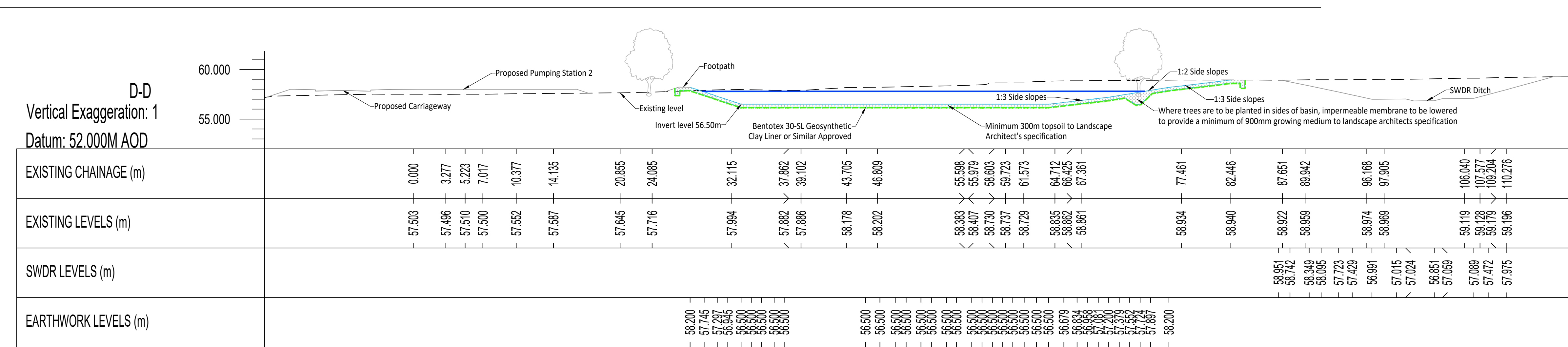
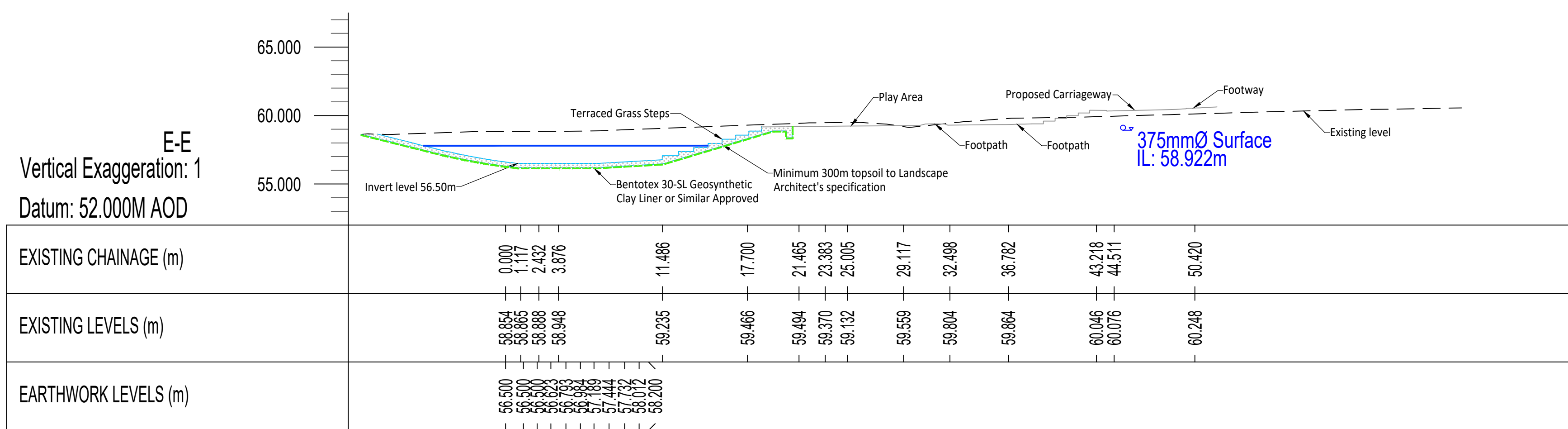
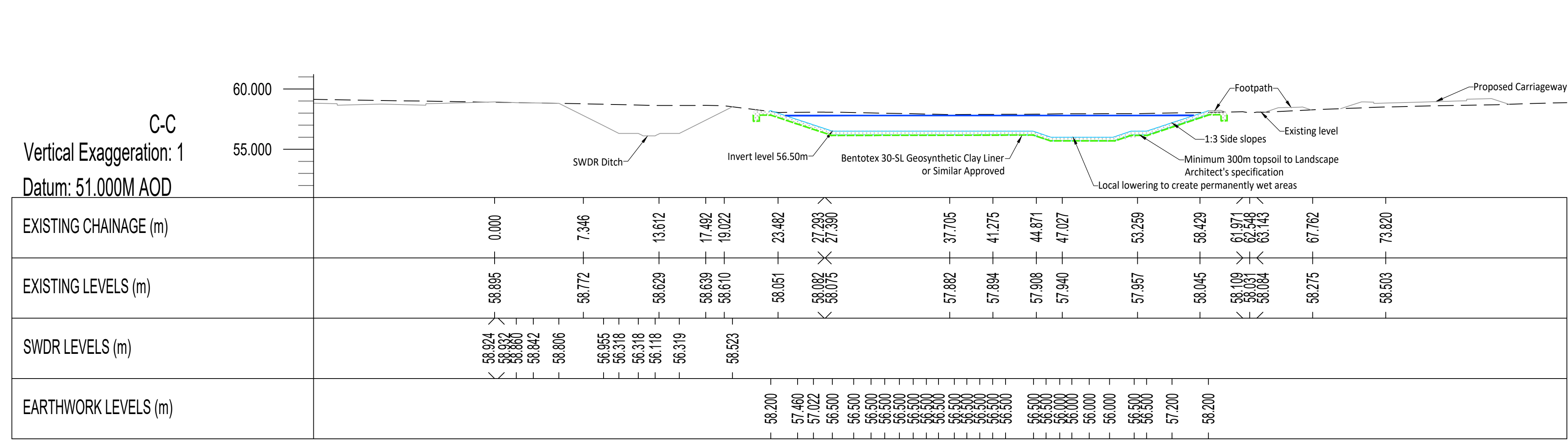
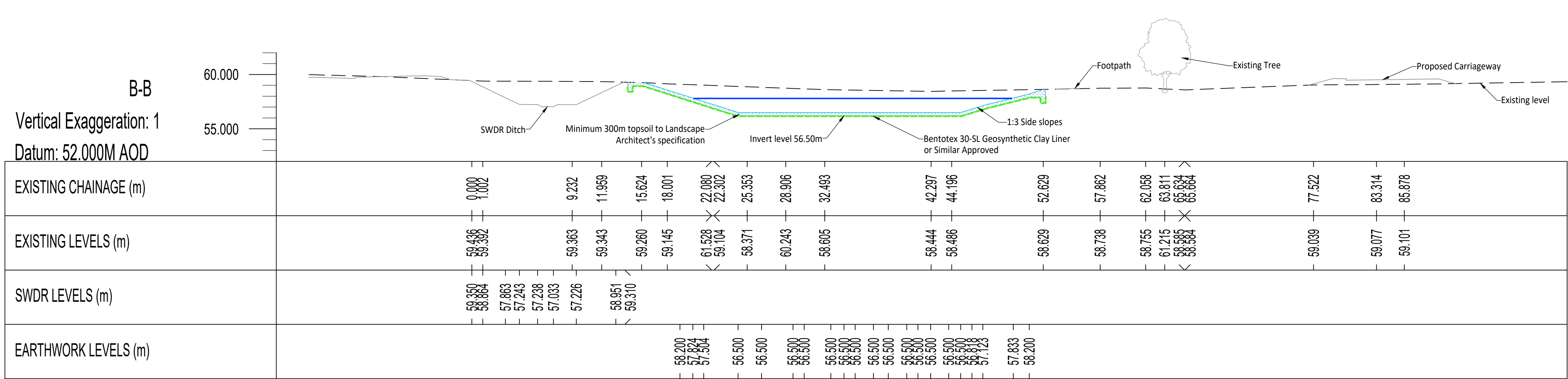
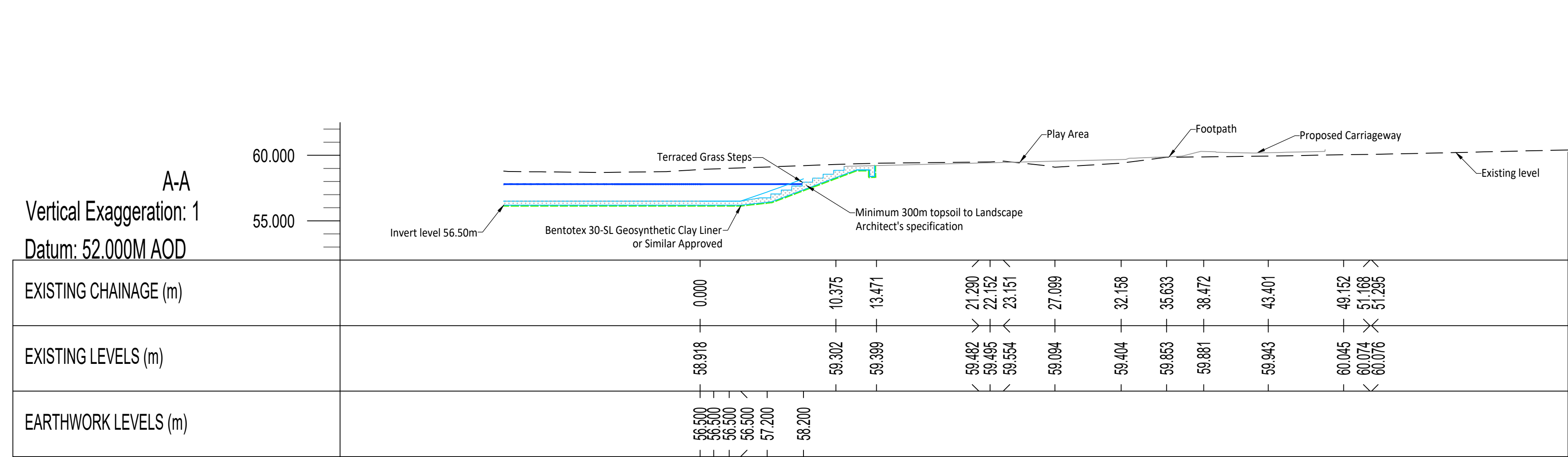
A389-R7&R13-RM-509

B

SUBJECT TO
TECHNICAL APPROVAL

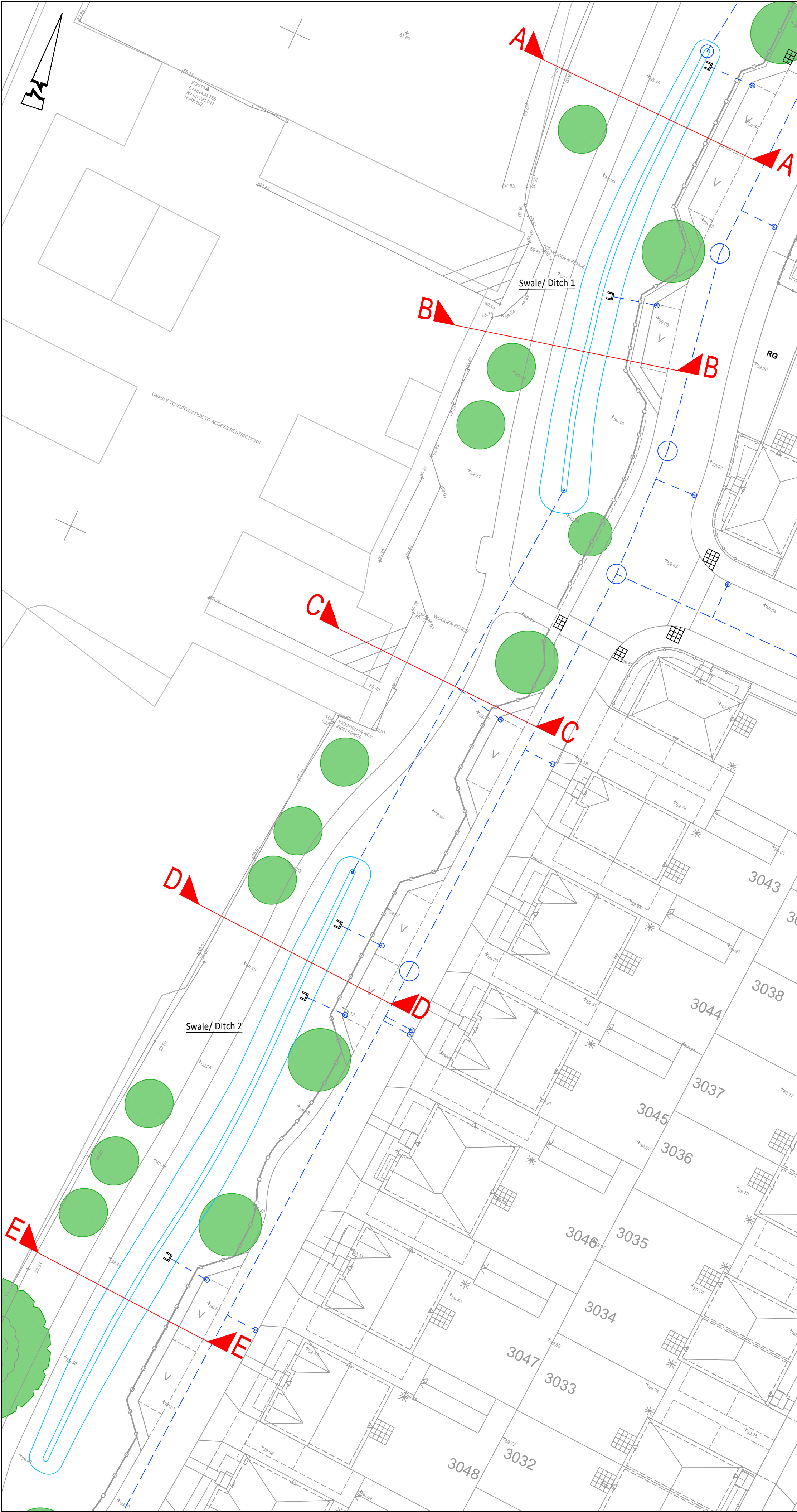


- GENERAL NOTES:
1. Do not scale.
 2. This drawing is to be read in conjunction with and checked against all other drawings, Engineering details, Specification and any structural, Geotechnical or other specialist document provided.
 3. The proposed works on this drawing could impact on existing services/statutory undertakers apparatus therefore the contractor should check the position of existing services on site prior to starting work.
 4. Any anomaly or contradiction between any of the above is to be reported to the Engineer.
- Key:
- Proposed adoptable sewer & MHI
 - Highway gully and 150mmØ connection
 - Proposed Control Manhole
 - Proposed Catchpit Manhole
 - Proposed H50C Headwall
 - Proposed Headwall
 - Proposed French Drain
 - Proposed Basin
 - Proposed Trees
- Sections Key:
- Existing Ground Levels
 - Proposed Centreline Profile
 - Basin Levels
 - Max Water Level



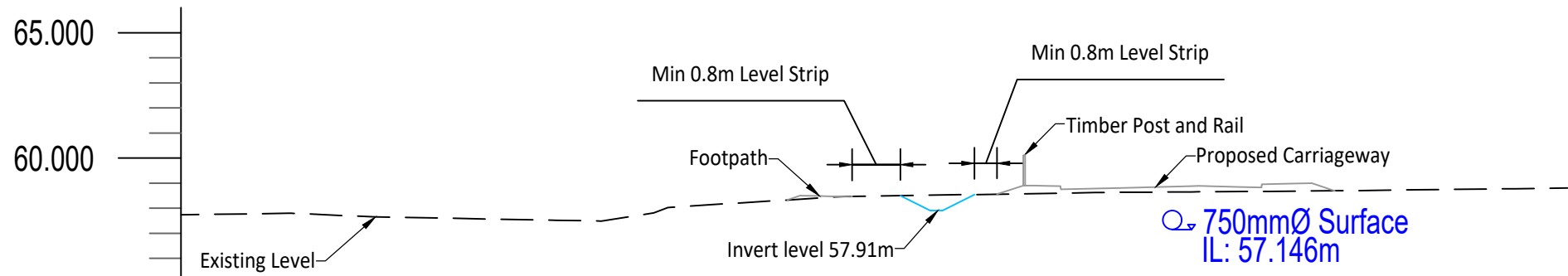
SUBJECT TO
TECHNICAL APPROVAL

D: 10.24	BASIN UPDATED TO SHOW LOCALISED PERMANENTLY WET AREA	RF	RF
C: 10.24	AMENDED TO SUIT UPDATED LAYOUT	RD	RF
B: 10.24	AMENDED TO SUIT UPDATED LAYOUT	RD	RF
A: 12.24	FIRST ISSUE	AD	RF
Rev	Issue	Description	Date
1	1	Issue	12/24
Abley Letchford			
www.ableyletchford.co.uk			
Client			
MILLER HOMES			
Project			
SOUTH WOKINGHAM SDL PHASE 2B R7 & R13 RESERVED MATTERS APPLICATION			
Title			
R13 BASIN CROSS SECTIONS			
Scale			
Sheet	1:250 @ A0	Date	DEC 2025
Drawn	AS	Checked	RF
Projecting	A389-R7&R13-RM-530	Revised	D



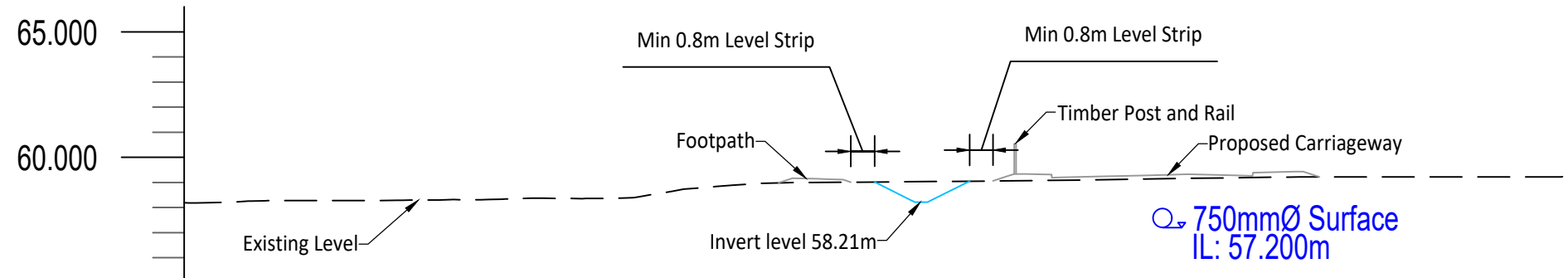
A-A
Vertical Exaggeration: 1
Datum: 55.000M AOD

EXISTING CHAINAGE (m)		0.000	1.752	3.847	11.470	18.534	21.471	25.295
EXISTING LEVELS (m)		57.519	57.486	57.813	58.470	58.571	58.625	58.652



B-B
Vertical Exaggeration: 1
Datum: 55.000M AOD

EXISTING CHAINAGE (m)		0.000	0.784	1.579	2.886	4.470	6.210	8.105	8.976	13.240	19.238	24.968
EXISTING LEVELS (m)		58.364	58.363	58.364	58.363	58.650	58.836	58.968	58.991	59.020	59.076	59.161

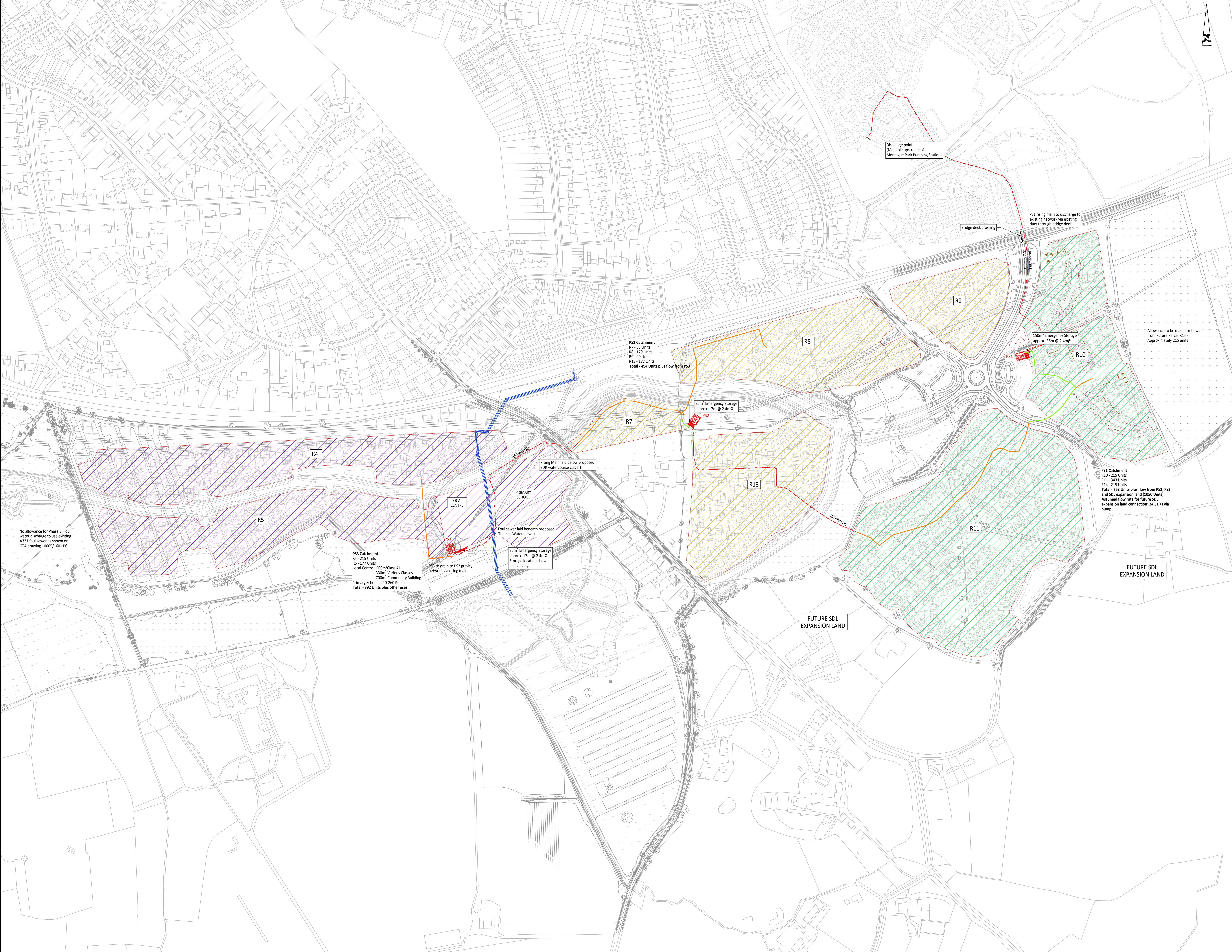


C-C
Vertical Exaggeration: 1
Datum: 55.000M AOD

EXISTING CHAINAGE (m)		0.000	0.026	0.042	0.057	0.073	0.088	0.104	0.119	0.135	0.150	0.166	0.181	0.197	0.212	0.228	0.243	0.259	0.274	0.289	0.305	0.320	0.336	0.351	0.367	0.382	0.397	0.413	0.428	0.443	0.459	0.474	0.489	0.505	0.520	0.536	0.551	0.567	0.582	0.597	0.613	0.628	0.643	0.659	0.674	0.689	0.705	0.720	0.736	0.751	0.767	0.782	0.797	0.813	0.828	0.843	0.859	0.874	0.889	0.905	0.920	0.936	0.951	0.967	0.982	0.997	1.013	1.028	1.043	1.059	1.074	1.089	1.105	1.120	1.136	1.151	1.167	1.182	1.197	1.213	1.228	1.243	1.259	1.274	1.289	1.305	1.320	1.336	1.351	1.367	1.382	1.397	1.413	1.428	1.443	1.459	1.474	1.489	1.505	1.520	1.536	1.551	1.567	1.582	1.597	1.613	1.628	1.643	1.659	1.674	1.689	1.705	1.720	1.736	1.751	1.767	1.782	1.797	1.813	1.828	1.843	1.859	1.874	1.889	1.905	1.920	1.936	1.951	1.967	1.982	1.997	2.013	2.028	2.043	2.059	2.074	2.089	2.105	2.120	2.136	2.151	2.167	2.182	2.197	2.213	2.228	2.243	2.259	2.274	2.289	2.305	2.320	2.336	2.351	2.367	2.382	2.397	2.413	2.428	2.443	2.459	2.474	2.489	2.505	2.520	2.536	2.551	2.567	2.582	2.597	2.613	2.628	2.643	2.659	2.674	2.689	2.705	2.720	2.736	2.751	2.767	2.782	2.797	2.813	2.828	2.843	2.859	2.874	2.889	2.905	2.920	2.936	2.951	2.967	2.982	2.997	3.013	3.028	3.043	3.059	3.074	3.089	3.105	3.120	3.136	3.151	3.167	3.182	3.197	3.213	3.228	3.243	3.259	3.274	3.289	3.305	3.320	3.336	3.351	3.367	3.382	3.397	3.413	3.428	3.443	3.459	3.474	3.489	3.505	3.520	3.536	3.551	3.567	3.582	3.597	3.613	3.628	3.643	3.659	3.674	3.689	3.705	3.720	3.736	3.751	3.767	3.782	3.797	3.813	3.828	3.843	3.859	3.874	3.889	3.905	3.920	3.936	3.951	3.967	3.982	3.997	4.013	4.028	4.043	4.059	4.074	4.089	4.105	4.120	4.136	4.151	4.167	4.182	4.197	4.213	4.228	4.243	4.259	4.274	4.289	4.305	4.320	4.336	4.351	4.367	4.382	4.397	4.413	4.428	4.443	4.459	4.474	4.489	4.505	4.520	4.536	4.551	4.567	4.582	4.597	4.613	4.628	4.643	4.659	4.674	4.689	4.705	4.720	4.736	4.751	4.767	4.782	4.797	4.813	4.828	4.843	4.859	4.874	4.889	4.905	4.920	4.936	4.951	4.967	4.982	4.997	5.013	5.028	5.043	5.059	5.074	5.089	5.105	5.120	5.136	5.151	5.167	5.182	5.197	5.213	5.228	5.243	5.259	5.274	5.289	5.305	5.320	5.336	5.351	5.367	5.382	5.397	5.413	5.428	5.443	5.459	5.474	5.489	5.505	5.520	5.536	5.551	5.567	5.582	5.597	5.613	5.628	5.643	5.659	5.674	5.689	5.705	5.720	5.736	5.751	5.767	5.782	5.797	5.813	5.828	5.843	5.859	5.874	5.889	5.905	5.920	5.936	5.951	5.967	5.982	5.997	6.013	6.028	6.043	6.059	6.074	6.089	6.105	6.120	6.136	6.151	6.167	6.182	6.197	6.213	6.228	6.243	6.259	6.274	6.289	6.305	6.320	6.336	6.351	6.367	6.382	6.397	6.413	6.428	6.443	6.459	6.474	6.489	6.505	6.520	6.536	6.551	6.567	6.582	6.597	6.613	6.628	6.643	6.659	6.674	6.689	6.705	6.720	6.736	6.751	6.767	6.782	6.797	6.813	6.828	6.843	6.859	6.874	6.889	6.905	6.920	6.936	6.951	6.967	6.982	6.997	7.013	7.028	7.043	7.059	7.074	7.089	7.105	7.120	7.136	7.151	7.167	7.182	7.197	7.213	7.228	7.243	7.259	7.274	7.289	7.305	7.320	7.336	7.351	7.367	7.382	7.397	7.413	7.428	7.443	7.459	7.474	7.489	7.505	7.520	7.536	7.551	7.567	7.582	7.597	7.613	7.628	7.643	7.659	7.674	7.689	7.705	7.720	7.736	7.751	7.767	7.782	7.797	7.813	7.828	7.843	7.859	7.874	7.889	7.905	7.920	7.936	7.951	7.967	7.982	7.997	8.013	8.028	8.043	8.059	8.074	8.089	8.105	8.120	8.136	8.151	8.167	8.182	8.197	8.213	8.228	8.243	8.259	8.274	8.289	8.305	8.320	8.336	8.351	8.367	8.382	8.397	8.413	8.428	8.443	8.459	8.474	8.489	8.505	8.520	8.536	8.551	8.567	8.582	8.597	8.613	8.628	8.643	8.659	8.674	8.689	8.705	8.720	8.736	8.751	8.767	8.782	8.797	8.813	8.828	8.843	8.859	8.874	8.889	8.905	8.920	8.936	8.951	8.967	8.982	8.997	9.013	9.028	9.043	9.059	9.074	9.089	9.105	9.120	9.136	9.151	9.167	9.182	9.197	9.213	9.228	9.243	9.259	9.274	9.289	9.305	9.320	9.336	9.351	9.367	9.382	9.397	9.413	9.428	9.443	9.459	9.474	9.489	9.505	9.520	9.536	9.551	9.567	9.582	9.597	9.613	9.628	9.643	9.659	9.674	9.689	9.705	9.720	9.736	9.751	9.767	9.782	9.797	9.813	9.828	9.843	9.859	9.874	9.889	9.905	9.920	9.936	9.951	9.967	9.982	9.997	10.013	10.028	10.043	10.059	10.074	10.089	10.105	10.120	10.136	10.151	10.167	10.182	10.197	10.213	10.228	10.243	10.259	10.274	10.289	10.305	10.320	10.336	10.351	10.367	10.382	10.397	10.413	10.428	10.443	10.459	10.474	10.489	10.505	10.520	10.536	10.551	10.567	10.582	10.597	10.613	10.628	10.643	10.659	10.674	10.689	10.705	10.720	10.736	10.751	10.767	10.782	10.797	10.813	10.828	10.843	10.859	10.874	10.889	10.905	10.920	10.936	10.951	10.967	10.982	10.997	11.013	11.028	11.043	11.059	11.074	11.089	11.105	11.120	11.136	11.151	11.167	11.182	11.197	11.213	11.228	11.243	11.259	11.274	11.289	11.305	11.320	11.336	11.351	11.367	11.382	11.397	11.413	11.428	11.443	11.459	11.474	11.489	11.505	11.520	11.536	11.551	11.567	11.582	11.597	11.613	11.628	11.643	11.659	11.674	11.689	11.705	11.720	11.736	11.751	11.767	11.782	11.797	11.813	11.828	11.843	11.859	11.874	11.889	11.905	11.920	11.936	11.951	11.967	11.982	11.997	12.013	12.028	12.043	12.059	12.074	12.089	12.105	12.120	12.136	12.151	12.167	12.182	12.197	12.213	12.228	12.243	12.259	12.274	12.289	12.305	12.320	12.336	12.351	12.367	12.382	12.397	12.413	12.428	12.443	12.459	12.474	12.489	12.505	12.520	12.536	12.551	12.567	12.582	12.597	12.613	12.628	12.643	12.659	12.674	12.689	12.705	12.720	12.736	12.751	12.767	12.782	12.797	12.813	12.828	12.843	12.859	12.874	12.889	12.905	12.920	12.936	12.951	12.967	12.982	12.997	13.013	13.028	13.043	13.059	13.074	13.089	13.105	13.120	13.136	13.151	13.167	13.182	13.197	13.213	13.228	13.243	13.259	13.274	13.289	13.305	13.320	13.336	13.351	13.367	13.382	13.397	13.413	13.428	13.443	13.459	13.474	13.489	13.505	13.520	13.536	13.551	13.567	13.582	13.597	13.613	13.628	13.643	13.659	13.674	13.689	13.705	13.720	13.736	13.751	13.767	13.782	13.797	13.813	13.828	13.843	13.859	13.874	13.889	13.905	13.920	13.936	13.951	13.967	13.982	13.997	14.013	14.028	14.043	14.059	14.074	14.089	14.105	14.120	14.136	14.151	14.167	14.182	14.197	14.213	14.228	14.243	14.259	14.274	14.289	14.305	14.320	14.336	14.351	14.367	14.382	14.397	14.413	14.428	14.443	14.459	14.474	14.489	14.505	14.520	14.536	14.551	14.567	14.582	14.597	14.613	14.628	14.643	14.659	14.674	14.689	14.705	14.720	14.736	14.751	14.767	14.782	14.797	14.813	14.828	14.843	14.859	14.874	14.889	14.905	14.920	14.936	14.951	14.967	14.982	14.997	15.013	15.028	15.043	15.059	15.074	15.089	15.105	15.120	15.136	15.151	15.167	15.182	15.197	15.213	15.228	15.243	15.259	15.274	15.289	15.305	15.320	15.336	15.351	15.367	15.382	15.397	15.413	15.428	15.443	15.459	15.474	15.489	15.505	15.520	15.536	15.551	15.567	15.582	15.597	15.613	15.628	15.643	15.659	15.674	15.689	15.705	15.720	15.736	15.751	15.767	15.782	15.797	15.813	15.828	15.843	15.859	15.874	15.889	15.905	15.920	15.936	15.951	15.967	15.982	15.997	16.013	16.028	16.043	16.059	16.074	16.089	16.105	16.120	16.136	16.151	16.167	16.182	16.197	16.213	16.228	16.243	16.259	16.274	16.289	16.305	16.320	16.336	16.351	16.367	16.382	16.397	16.413	16.428	16.443	16.459	16.474	16.489	16.505	16.520	16.536	16.551	16.567	16.582	16.597	16.613	16.628	16.643	16.659	16.674	16.689	16.705	16.720	16.736	16.751	16.767	16.782	16.797	16.813	16.828	16.843	16.859	16.874	16.889	16.905	16.920	16.936	16.951	16.967	16.982	16.997	17.013	17.028	17.043	17.059	17.074	17.089	17.105	17.120	17.136	17.151	17.167	17.182	17.197	17.213	17.228	17.243	17.259	17.274	17.289	17.305	17.320	17.336	17.351	17.367	17.382	17.397	17.413	17.428	17.443	17.459	17.474	17.489	17.505	17.520	17.536	17.551	17.567	17.582	17.597	17.613	17.628	17.643	17.659	17.674	17.689	17.705	17.720	17.736	17.751	17.767	17.782	17.797	17.813	17.828	17.843	17.859	17.874	17.889	17.905	17.920	17.936	17.951	17.967	17.982	17.997	18.013	18.028	18.043	18.059	18.074	18.089	18.105	18.120	18.136	18.151	18.167	18.182	18.197
-----------------------	--	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------



Appendix B – Sitewide Foul Drainage Strategy



© ABLEY LETCHFORD PARTNERSHIP LTD.
This drawing should not be reproduced without consent.

Notes:
1. Do not scale from this drawing.
2. Refer to all other project drawings and supporting notes.

Key:

- Proposed Foul Sewer (150mm Dia)
- Proposed Foul Sewer (225mm Dia)
- Proposed Foul Sewer (300mm Dia)
- Proposed Pumping Station
- Proposed Rising Main
- Proposed Emergency Storage - 2.4mØ x Varies
- P51 Catchment Area
- P52 Catchment Area
- P53 Catchment Area

No allowance for Phase 3. Foul water discharge to use existing A321 foul sewers as shown on GTA drawing 10005/1601 P6

P53 Catchment
R4 - 215 Units
R5 - 177 Units
Local Centre - 500m² Class A1
330m² Various Classes
700m² Community Building
Primary School - 240-260 Pupils
Total - 392 Units plus other uses

P53 to drain to P52 gravity network via rising main

75m³ Emergency Storage approx. 17m Ø 2.4mØ
Storage location shown indicatively.

Foul sewer laid beneath proposed Thames Water culvert

Rising Main laid below proposed SDR watercourse culvert

P52 Catchment
R7 - 38 Units
R8 - 179 Units
R9 - 50 Units
R13 - 187 Units
Total - 454 Units plus flow from P53

75m³ Emergency Storage approx. 17m Ø 2.4mØ

150m³ Emergency Storage approx. 35m Ø 2.4mØ

P51 rising main to discharge to existing network via existing duct through bridge deck

Bridge deck crossing

Discharge point (Manhole upstream of Montague Park Pumping Station)

Allowance to be made for flows from Future Parcel R14 - Approximately 215 units

P51 Catchment
R10 - 215 Units
R11 - 343 Units
Total - 763 Units plus flow from P52, P53 and SDL expansion land (1050 Units).
Assumed flow rate for future SDL expansion land connection: 24.3l/s via pump.

FUTURE SDL EXPANSION LAND

FUTURE SDL EXPANSION LAND

P9	06.25	INTERIM RISING MAIN REMOVED	CS	RF
P8	06.25	R10 DWELLING NUMBERS UPDATED	CS	RF
P7	11.24	UPDATED TO SUIT LATEST ACCOMMODATION SCHEDULE AND CONCURRENT FOUl ROUTES	CS	LPA
P6	06.24	P51 FOUl RISING MAIN AMENDED	CS	LPA
P5	06.24	GENERAL AMENDMENTS	CS	LPA
P4	06.24	EMERGENCY STORAGE ADDED	CS	LPA
P3	05.24	CATCHMENT AREAS UPDATED KEY UPDATED	CS	LPA
P2	07.23	PUMP STATION ADDED TO ALLOW EARLY CONSTRUCTION OF PHASE R13	KLW	LPA
P1	07.22	FIRST ISSUE	JA	KLW

Abley Letchford
www.ableyletchford.co.uk

Client
MILLER HOMES KIER VENTURES

Project
SOUTH WOKINGHAM SDL

Title
SITE OVERVIEW FOUl WATER STRATEGY

Scale	Date	Author	Checked
1:2000 @ A0	JULY 2022	KLW	LPA
Drawn by	Reviewed		
A389-003	P9		



Appendix C – Surface Water Hydraulic Model Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	9.999
CV	0.950	Preferred Cover Depth (m)	1.250
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	550.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S-R7-2			57.618	1200	482524.226	167866.135	1.436
S-R7-3	0.020	5.00	57.449	1200	482514.939	167871.941	1.404
S-R7-4	0.024	5.00	57.165	1200	482495.680	167873.537	1.362
S-R7-18	0.032	5.00	56.000	1200	482378.292	167831.341	0.850
S-R7-6	0.035	5.00	56.817	1200	482472.463	167879.574	1.553
S-R7-7	0.039	5.00	56.422	1200	482443.802	167887.294	1.280
S-R7-8	0.024	5.00	56.278	1200	482430.234	167888.279	1.428
S-R7-9	0.023	5.00	56.130	1350	482416.179	167885.107	1.630
S-R7-10	0.057	5.00	55.888	1350	482395.177	167873.708	1.994
J1	0.007	5.00	57.435		482508.566	167868.315	1.400
S-R7-12	0.005	5.00	55.812	1350	482384.717	167863.074	1.979
S-R7-13	0.019	5.00	55.958	1350	482374.680	167849.063	2.232
S-R7-14	0.024	5.00	56.074	1350	482367.425	167839.928	2.396
J2	0.007	5.00	57.189		482492.403	167869.615	1.400
S-R7-HW			56.030		482330.139	167824.933	2.576
S-R7-1	0.044	5.00	57.820	1200	482529.642	167854.272	1.475
S-R7-11	0.081	5.00	56.392	1350	482396.176	167855.165	1.154
S-R7-5	0.094	5.00	57.025	1200	482469.292	167867.896	0.710
S-R7-15	0.027	5.00	56.246	1350	482348.558	167819.066	2.719
S-R7-16	0.028	5.00	56.193	1200	482347.750	167816.530	2.483
S-R7-17		5.00	56.057	1200	482342.649	167811.132	2.257
J3	0.007	5.00	56.596		482458.709	167878.389	1.128
J4	0.008	5.00	56.488		482437.573	167884.283	1.432
J5	0.008	5.00	56.263		482417.812	167881.492	1.400
J6	0.008	5.00	56.044		482403.461	167873.867	1.400
J7	0.007	5.00	56.091		482381.053	167850.277	1.400

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S-R7-1	S-R7-2	13.041	0.600	56.345	56.182	0.163	80.0	225	5.13	55.1
1.001	S-R7-2	S-R7-3	10.953	0.600	56.182	56.045	0.137	80.0	225	5.24	54.6
1.002	S-R7-3	S-R7-4	19.325	0.600	56.045	55.803	0.242	80.0	225	5.45	53.8
1.003	S-R7-4	S-R7-6	23.989	0.600	55.803	55.399	0.404	59.4	225	5.70	52.8
4.000_1	S-R7-5	S-R7-6	12.101	0.600	56.315	55.399	0.916	13.2	225	5.20	54.8
1.004	S-R7-6	S-R7-7	29.683	0.600	55.264	55.142	0.122	243.3	300	6.02	51.5
1.005	S-R7-7	S-R7-8	13.604	0.600	55.202	54.850	0.352	38.6	300	6.16	51.0
1.006	S-R7-8	S-R7-9	14.408	0.600	54.850	54.500	0.350	41.2	300	6.25	50.7
1.007	S-R7-9	S-R7-10	23.896	0.600	54.500	53.894	0.606	39.4	300	6.64	49.2
1.008	S-R7-10	S-R7-12	14.916	0.600	53.894	53.833	0.061	244.5	300	6.72	48.9
9.000	S-R7-11	S-R7-12	13.923	0.600	55.238	53.846	1.392	10.0	300	6.95	48.1
1.009	S-R7-12	S-R7-13	17.235	0.600	53.833	53.726	0.107	161.1	300	5.28	54.4
1.010	S-R7-13	S-R7-14	11.665	0.600	53.726	53.678	0.048	243.0	300	5.48	53.7
1.011	S-R7-14	S-R7-15	36.889	0.600	53.678	53.527	0.151	244.3	300	6.09	51.2
4.000	S-R7-17	S-R7-16	7.427	0.600	53.800	53.710	0.090	82.5	225	5.09	55.2
4.001	S-R7-16	S-R7-15	2.662	0.600	53.710	53.602	0.108	24.6	225	5.10	55.1
1.012	S-R7-15	S-R7-HW	18.100	0.600	53.527	53.454	0.073	247.9	300	6.13	51.1
11.000	S-R7-18	S-R7-14	13.850	0.600	55.150	53.770	1.380	10.0	225	5.06	55.4
2.000	J1	S-R7-4	13.904	0.600	56.035	55.876	0.159	87.4	150	5.22	54.7
3.000	J2	S-R7-6	22.289	0.600	55.789	55.414	0.375	59.4	150	5.28	54.4
5.000	J3	S-R7-7	17.364	0.600	55.468	55.352	0.116	149.7	150	5.35	54.2
6.000	J4	S-R7-8	8.356	0.600	55.056	55.000	0.056	149.2	150	5.17	54.9
7.000	J5	S-R7-9	3.967	0.600	54.863	54.650	0.213	18.6	150	5.03	55.5
8.000	J6	S-R7-10	8.286	0.600	54.644	54.044	0.600	13.8	150	5.05	55.4

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.463	58.2	8.3	1.250	1.211	0.044	0.0	58	1.048
1.001	1.463	58.2	8.2	1.211	1.179	0.044	0.0	57	1.039
1.002	1.463	58.2	11.8	1.179	1.137	0.064	0.0	69	1.157
1.003	1.700	67.6	17.2	1.137	1.193	0.095	0.0	77	1.423
4.000_1	3.619	143.9	17.7	0.485	1.193	0.094	0.0	53	2.483
1.004	1.003	70.9	40.9	1.253	0.980	0.231	0.0	164	1.038
1.005	2.536	179.3	48.4	0.920	1.128	0.277	0.0	106	2.167
1.006	2.457	173.7	53.7	1.128	1.330	0.309	0.0	114	2.172
1.007	2.511	177.5	57.2	1.330	1.694	0.339	0.0	117	2.247
1.008	1.001	70.7	67.8	1.694	1.679	0.404	0.0	236	1.134
9.000	4.998	353.3	13.4	0.854	1.666	0.081	0.0	40	2.440
1.009	1.236	87.4	91.6	1.679	1.932	0.491	0.0	264	1.390
1.010	1.004	71.0	95.4	1.932	2.096	0.517	0.0	300	1.017
1.011	1.001	70.8	100.7	2.096	2.419	0.573	0.0	300	1.014
4.000	1.440	57.3	0.0	2.032	2.258	0.000	0.0	0	0.000
4.001	2.646	105.2	5.3	2.258	2.419	0.028	0.0	34	1.388
1.012	0.994	70.2	110.1	2.419	2.276	0.628	0.0	300	1.007
11.000	4.154	165.2	6.2	0.625	2.079	0.032	0.0	29	2.003
2.000	1.075	19.0	1.3	1.250	1.139	0.007	0.0	26	0.608
3.000	1.307	23.1	1.4	1.250	1.253	0.007	0.0	25	0.719
5.000	0.819	14.5	1.2	0.978	0.920	0.007	0.0	30	0.499
6.000	0.820	14.5	1.5	1.282	1.128	0.008	0.0	32	0.524
7.000	2.345	41.4	1.5	1.250	1.330	0.008	0.0	19	1.094
8.000	2.725	48.2	1.6	1.250	1.694	0.008	0.0	18	1.247

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
10.000	J7	S-R7-13	6.488	0.600	54.691	53.876	0.815	8.0	150	5.03	55.5

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
10.000	3.593	63.5	1.4	1.250	1.932	0.007	0.0	16	1.473

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	13.041	80.0	225	ADOPTABLE	57.820	56.345	1.250	57.618	56.182	1.211
1.001	10.953	80.0	225	ADOPTABLE	57.618	56.182	1.211	57.449	56.045	1.179
1.002	19.325	80.0	225	ADOPTABLE	57.449	56.045	1.179	57.165	55.803	1.137
1.003	23.989	59.4	225	ADOPTABLE	57.165	55.803	1.137	56.817	55.399	1.193
4.000_1	12.101	13.2	225	ADOPTABLE	57.025	56.315	0.485	56.817	55.399	1.193
1.004	29.683	243.3	300	ADOPTABLE	56.817	55.264	1.253	56.422	55.142	0.980
1.005	13.604	38.6	300	ADOPTABLE	56.422	55.202	0.920	56.278	54.850	1.128
1.006	14.408	41.2	300	ADOPTABLE	56.278	54.850	1.128	56.130	54.500	1.330
1.007	23.896	39.4	300	ADOPTABLE	56.130	54.500	1.330	55.888	53.894	1.694
1.008	14.916	244.5	300	ADOPTABLE	55.888	53.894	1.694	55.812	53.833	1.679
9.000	13.923	10.0	300	ADOPTABLE	56.392	55.238	0.854	55.812	53.846	1.666
1.009	17.235	161.1	300	ADOPTABLE	55.812	53.833	1.679	55.958	53.726	1.932
1.010	11.665	243.0	300	ADOPTABLE	55.958	53.726	1.932	56.074	53.678	2.096
1.011	36.889	244.3	300	ADOPTABLE	56.074	53.678	2.096	56.246	53.527	2.419
4.000	7.427	82.5	225	ADOPTABLE	56.057	53.800	2.032	56.193	53.710	2.258
4.001	2.662	24.6	225	ADOPTABLE	56.193	53.710	2.258	56.246	53.602	2.419
1.012	18.100	247.9	300	ADOPTABLE	56.246	53.527	2.419	56.030	53.454	2.276
11.000	13.850	10.0	225	ADOPTABLE	56.000	55.150	0.625	56.074	53.770	2.079
2.000	13.904	87.4	150	ADOPTABLE	57.435	56.035	1.250	57.165	55.876	1.139

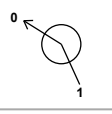
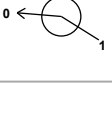
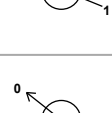
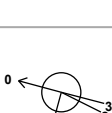
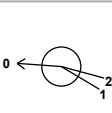
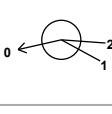
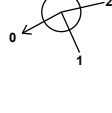
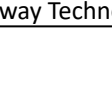
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S-R7-1	1200	Manhole	Adoptable	S-R7-2	1200	Manhole	Adoptable
1.001	S-R7-2	1200	Manhole	Adoptable	S-R7-3	1200	Manhole	Adoptable
1.002	S-R7-3	1200	Manhole	Adoptable	S-R7-4	1200	Manhole	Adoptable
1.003	S-R7-4	1200	Manhole	Adoptable	S-R7-6	1200	Manhole	Adoptable
4.000_1	S-R7-5	1200	Manhole	Adoptable	S-R7-6	1200	Manhole	Adoptable
1.004	S-R7-6	1200	Manhole	Adoptable	S-R7-7	1200	Manhole	Adoptable
1.005	S-R7-7	1200	Manhole	Adoptable	S-R7-8	1200	Manhole	Adoptable
1.006	S-R7-8	1200	Manhole	Adoptable	S-R7-9	1350	Manhole	Adoptable
1.007	S-R7-9	1350	Manhole	Adoptable	S-R7-10	1350	Manhole	Adoptable
1.008	S-R7-10	1350	Manhole	Adoptable	S-R7-12	1350	Manhole	Adoptable
9.000	S-R7-11	1350	Manhole	Adoptable	S-R7-12	1350	Manhole	Adoptable
1.009	S-R7-12	1350	Manhole	Adoptable	S-R7-13	1350	Manhole	Adoptable
1.010	S-R7-13	1350	Manhole	Adoptable	S-R7-14	1350	Manhole	Adoptable
1.011	S-R7-14	1350	Manhole	Adoptable	S-R7-15	1350	Manhole	Adoptable
4.000	S-R7-17	1200	Manhole	Adoptable	S-R7-16	1200	Manhole	Adoptable
4.001	S-R7-16	1200	Manhole	Adoptable	S-R7-15	1350	Manhole	Adoptable
1.012	S-R7-15	1350	Manhole	Adoptable	S-R7-HW		Junction	
11.000	S-R7-18	1200	Manhole	Adoptable	S-R7-14	1350	Manhole	Adoptable
2.000	J1		Junction		S-R7-4	1200	Manhole	Adoptable

Pipeline Schedule

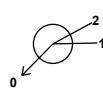
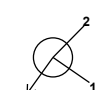
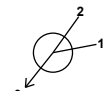
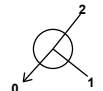
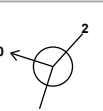
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
3.000	22.289	59.4	150	ADOPTABLE	57.189	55.789	1.250	56.817	55.414	1.253
5.000	17.364	149.7	150	ADOPTABLE	56.596	55.468	0.978	56.422	55.352	0.920
6.000	8.356	149.2	150	ADOPTABLE	56.488	55.056	1.282	56.278	55.000	1.128
7.000	3.967	18.6	150	ADOPTABLE	56.263	54.863	1.250	56.130	54.650	1.330
8.000	8.286	13.8	150	ADOPTABLE	56.044	54.644	1.250	55.888	54.044	1.694
10.000	6.488	8.0	150	ADOPTABLE	56.091	54.691	1.250	55.958	53.876	1.932

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
3.000	J2		Junction		S-R7-6	1200	Manhole	Adoptable
5.000	J3		Junction		S-R7-7	1200	Manhole	Adoptable
6.000	J4		Junction		S-R7-8	1200	Manhole	Adoptable
7.000	J5		Junction		S-R7-9	1350	Manhole	Adoptable
8.000	J6		Junction		S-R7-10	1350	Manhole	Adoptable
10.000	J7		Junction		S-R7-13	1350	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S-R7-2	482524.226	167866.135	57.618	1.436	1200		1 1.000	56.182	225
							0 1.001	56.182	225
S-R7-3	482514.939	167871.941	57.449	1.404	1200		1 1.001	56.045	225
							0 1.002	56.045	225
S-R7-4	482495.680	167873.537	57.165	1.362	1200		1 2.000	55.876	150
							2 1.002	55.803	225
							0 1.003	55.803	225
S-R7-18	482378.292	167831.341	56.000	0.850	1200		0 11.000	55.150	225
S-R7-6	482472.463	167879.574	56.817	1.553	1200		1 4.000_1	55.399	225
							2 3.000	55.414	150
							3 1.003	55.399	225
							0 1.004	55.264	300
S-R7-7	482443.802	167887.294	56.422	1.280	1200		1 5.000	55.352	150
							2 1.004	55.142	300
							0 1.005	55.202	300
S-R7-8	482430.234	167888.279	56.278	1.428	1200		1 6.000	55.000	150
							2 1.005	54.850	300
							0 1.006	54.850	300
S-R7-9	482416.179	167885.107	56.130	1.630	1350		1 7.000	54.650	150
							2 1.006	54.500	300
							0 1.007	54.500	300

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S-R7-10	482395.177	167873.708	55.888	1.994	1350		1 2 0	8.000 1.007 1.008	54.044 53.894 53.894	150 300 300
J1	482508.566	167868.315	57.435	1.400			0	2.000	56.035	150
S-R7-12	482384.717	167863.074	55.812	1.979	1350		1 2 0	9.000 1.008 1.009	53.846 53.833 53.833	300 300 300
S-R7-13	482374.680	167849.063	55.958	2.232	1350		1 2 0	10.000 1.009 1.010	53.876 53.726 53.726	150 300 300
S-R7-14	482367.425	167839.928	56.074	2.396	1350		1 2 0	11.000 1.010 1.011	53.770 53.678 53.678	225 300 300
J2	482492.403	167869.615	57.189	1.400			0	3.000	55.789	150
S-R7-HW	482330.139	167824.933	56.030	2.576			1	1.012	53.454	300
S-R7-1	482529.642	167854.272	57.820	1.475	1200		0	1.000	56.345	225
S-R7-11	482396.176	167855.165	56.392	1.154	1350		0	9.000	55.238	300
S-R7-5	482469.292	167867.896	57.025	0.710	1200		0	4.000_1	56.315	225
S-R7-15	482348.558	167819.066	56.246	2.719	1350		1 2 0	4.001 1.011 1.012	53.602 53.527 53.527	225 300 300
S-R7-16	482347.750	167816.530	56.193	2.483	1200		1 0	4.000 4.001	53.710 53.710	225 225
S-R7-17	482342.649	167811.132	56.057	2.257	1200		0	4.000	53.800	225

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
J3	482458.709	167878.389	56.596	1.128					
						0	5.000	55.468	150
J4	482437.573	167884.283	56.488	1.432					
						0	6.000	55.056	150
J5	482417.812	167881.492	56.263	1.400					
						0	7.000	54.863	150
J6	482403.461	167873.867	56.044	1.400					
						0	8.000	54.644	150
J7	482381.053	167850.277	56.091	1.400					
						0	10.000	54.691	150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.950	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.950	Additional Storage (m³/ha)	0.0		

Storm Durations

60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0

Node S-R7-11 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	55.238	Slope (1:X)	62.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.450
Safety Factor	2.0	Width (m)	11.063	Inf Depth (m)	
Porosity	0.30	Length (m)	43.714		

Node S-R7-18 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	55.150	Slope (1:X)	60.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.450
Safety Factor	2.0	Width (m)	12.450	Inf Depth (m)	
Porosity	0.30	Length (m)	25.967		

Node S-R7-5 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	56.315	Slope (1:X)	169.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.450
Safety Factor	2.0	Width (m)	11.992	Inf Depth (m)	
Porosity	1.00	Length (m)	42.317		

Node J1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	56.035	Slope (1:X)	43.4
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.710
Safety Factor	2.0	Width (m)	5.897	Inf Depth (m)	
Porosity	0.30	Length (m)	11.192		

Node J2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	55.789	Slope (1:X)	56.2
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	1	Depth (m)	0.710
Safety Factor	2.0	Width (m)	7.430	Inf Depth (m)	
Porosity	0.30	Length (m)	11.344		

Node J3 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	55.468	Slope (1:X)	50.5
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	7	Depth (m)	0.710
Safety Factor	2.0	Width (m)	5.900	Inf Depth (m)	
Porosity	0.30	Length (m)	11.309		

Node J4 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	55.056	Slope (1:X)	55.3
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	10	Depth (m)	0.710
Safety Factor	2.0	Width (m)	5.878	Inf Depth (m)	
Porosity	0.30	Length (m)	12.565		

Node J5 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	54.863	Slope (1:X)	59.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	9	Depth (m)	0.710
Safety Factor	2.0	Width (m)	5.900	Inf Depth (m)	
Porosity	0.30	Length (m)	11.218		

Node J6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	54.644	Slope (1:X)	123.8
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	11	Depth (m)	0.710
Safety Factor	2.0	Width (m)	5.628	Inf Depth (m)	
Porosity	0.30	Length (m)	12.539		

Node J7 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	54.691	Slope (1:X)	40.6
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	7	Depth (m)	0.710
Safety Factor	2.0	Width (m)	5.900	Inf Depth (m)	
Porosity	0.30	Length (m)	12.915		

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R7-2	33	56.226	0.044	4.8	0.0501	0.0000	OK
60 minute summer	S-R7-3	33	56.098	0.053	7.0	0.0598	0.0000	OK
60 minute summer	S-R7-4	33	55.864	0.061	10.4	0.0689	0.0000	OK
60 minute summer	S-R7-18	33	55.173	0.023	3.6	0.0874	0.0000	OK
60 minute summer	S-R7-6	34	55.386	0.122	23.7	0.1375	0.0000	OK
60 minute summer	S-R7-7	34	55.286	0.144	28.4	0.1633	0.0000	OK
60 minute summer	S-R7-8	34	54.942	0.092	31.7	0.1043	0.0000	OK
60 minute summer	S-R7-9	34	54.590	0.090	35.0	0.1282	0.0000	OK
60 minute summer	S-R7-10	34	54.081	0.187	41.8	0.2682	0.0000	OK
60 minute summer	J1	34	56.055	0.020	0.7	0.0170	0.0000	OK
60 minute summer	S-R7-12	34	54.022	0.189	50.9	0.2699	0.0000	OK
60 minute summer	S-R7-13	34	53.955	0.229	53.6	0.3271	0.0000	OK
60 minute summer	S-R7-14	35	53.900	0.222	59.2	0.3179	0.0000	OK
60 minute summer	J2	34	55.808	0.019	0.8	0.0249	0.0000	OK
60 minute summer	S-R7-HW	35	53.653	0.199	64.8	0.0000	0.0000	OK
60 minute summer	S-R7-1	33	56.390	0.045	4.8	0.0508	0.0000	OK
60 minute summer	S-R7-11	33	55.271	0.033	9.0	0.1217	0.0000	OK
60 minute summer	S-R7-5	35	56.354	0.039	10.3	1.6267	0.0000	OK
60 minute summer	S-R7-15	35	53.752	0.225	62.9	0.3225	0.0000	OK
60 minute summer	S-R7-16	34	53.748	0.038	3.1	0.0429	0.0000	OK
60 minute summer	S-R7-17	1	53.800	0.000	0.0	0.0000	0.0000	OK
60 minute summer	J3	34	55.490	0.022	0.7	0.0247	0.0000	OK
60 minute summer	J4	34	55.080	0.024	0.8	0.0307	0.0000	OK
60 minute summer	J5	34	54.878	0.015	0.8	0.0128	0.0000	OK
60 minute summer	J6	34	54.658	0.014	0.9	0.0228	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R7-2	1.001	S-R7-3	4.8	0.764	0.083	0.0690	
60 minute summer	S-R7-3	1.002	S-R7-4	7.0	0.890	0.120	0.1522	
60 minute summer	S-R7-4	1.003	S-R7-6	10.3	1.218	0.153	0.2037	
60 minute summer	S-R7-18	11.000	S-R7-14	3.6	1.202	0.022	0.1781	
60 minute summer	S-R7-6	1.004	S-R7-7	23.7	0.786	0.334	0.8946	
60 minute summer	S-R7-7	1.005	S-R7-8	28.4	1.646	0.159	0.2351	
60 minute summer	S-R7-8	1.006	S-R7-9	31.8	1.766	0.183	0.2594	
60 minute summer	S-R7-9	1.007	S-R7-10	35.0	1.104	0.197	0.7638	
60 minute summer	S-R7-10	1.008	S-R7-12	41.8	0.899	0.591	0.6930	
60 minute summer	J1	2.000	S-R7-4	0.7	0.513	0.037	0.0190	
60 minute summer	S-R7-12	1.009	S-R7-13	50.7	0.973	0.581	0.8983	
60 minute summer	S-R7-13	1.010	S-R7-14	53.2	0.938	0.749	0.6620	
60 minute summer	S-R7-14	1.011	S-R7-15	59.0	1.048	0.833	2.0791	
60 minute summer	J2	3.000	S-R7-6	0.8	0.611	0.035	0.0291	
60 minute summer	S-R7-1	1.000	S-R7-2	4.8	0.863	0.083	0.0725	
60 minute summer	S-R7-11	9.000	S-R7-12	9.0	0.973	0.025	0.3264	
60 minute summer	S-R7-5	4.000_1	S-R7-6	9.0	1.985	0.063	0.0551	
60 minute summer	S-R7-15	1.012	S-R7-HW	64.8	1.217	0.922	0.9618	73.0
60 minute summer	S-R7-16	4.001	S-R7-15	3.7	0.727	0.035	0.0419	
60 minute summer	S-R7-17	4.000	S-R7-16	0.0	0.000	0.000	0.0164	
60 minute summer	J3	5.000	S-R7-7	0.7	0.424	0.048	0.0285	
60 minute summer	J4	6.000	S-R7-8	0.8	0.440	0.055	0.0152	
60 minute summer	J5	7.000	S-R7-9	0.8	0.909	0.019	0.0035	
60 minute summer	J6	8.000	S-R7-10	0.9	1.034	0.019	0.0177	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	J7	33	54.703	0.012	0.8	0.0063	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	J7	10.000	S-R7-13	0.8	1.113	0.013	0.0324	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R7-2	33	56.263	0.081	14.3	0.0915	0.0000	OK
60 minute summer	S-R7-3	33	56.141	0.096	20.8	0.1089	0.0000	OK
60 minute summer	S-R7-4	33	55.913	0.110	30.9	0.1248	0.0000	OK
60 minute summer	S-R7-18	33	55.188	0.038	10.5	0.2118	0.0000	OK
60 minute summer	S-R7-6	34	55.525	0.261	70.8	0.2954	0.0000	OK
60 minute summer	S-R7-7	35	55.378	0.236	84.8	0.2668	0.0000	OK
60 minute summer	S-R7-8	37	55.289	0.439	91.3	0.4968	0.0000	SURCHARGED
60 minute summer	S-R7-9	38	55.195	0.695	87.0	0.9952	0.0000	SURCHARGED
60 minute summer	S-R7-10	37	55.043	1.149	90.4	1.6438	0.0000	SURCHARGED
60 minute summer	J1	33	56.069	0.034	2.2	0.0486	0.0000	OK
60 minute summer	S-R7-12	36	54.932	1.099	102.6	1.5724	0.0000	SURCHARGED
60 minute summer	S-R7-13	35	54.743	1.017	107.8	1.4555	0.0000	SURCHARGED
60 minute summer	S-R7-14	35	54.578	0.900	120.4	1.2883	0.0000	SURCHARGED
60 minute summer	J2	33	55.822	0.033	2.4	0.0692	0.0000	OK
60 minute summer	S-R7-HW	34	53.729	0.275	136.3	0.0000	0.0000	OK
60 minute summer	S-R7-1	33	56.425	0.080	14.3	0.0905	0.0000	OK
60 minute summer	S-R7-11	33	55.293	0.055	26.5	0.2848	0.0000	OK
60 minute summer	S-R7-5	35	56.381	0.066	30.5	4.4995	0.0000	OK
60 minute summer	S-R7-15	34	54.052	0.525	136.3	0.7520	0.0000	SURCHARGED
60 minute summer	S-R7-16	34	54.054	0.344	9.1	0.3895	0.0000	SURCHARGED
60 minute summer	S-R7-17	34	54.054	0.254	2.2	0.2876	0.0000	SURCHARGED
60 minute summer	J3	33	55.507	0.039	2.2	0.0732	0.0000	OK
60 minute summer	J4	37	55.294	0.238	12.5	2.7703	0.0000	SURCHARGED
60 minute summer	J5	38	55.198	0.335	17.3	4.7798	0.0000	SURCHARGED
60 minute summer	J6	38	55.047	0.403	23.2	7.4604	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R7-2	1.001	S-R7-3	14.3	0.986	0.246	0.1590	
60 minute summer	S-R7-3	1.002	S-R7-4	20.8	1.171	0.358	0.3435	
60 minute summer	S-R7-4	1.003	S-R7-6	31.0	1.567	0.459	0.5007	
60 minute summer	S-R7-18	11.000	S-R7-14	10.5	1.188	0.064	0.3064	
60 minute summer	S-R7-6	1.004	S-R7-7	70.5	1.172	0.994	1.8329	
60 minute summer	S-R7-7	1.005	S-R7-8	83.4	1.932	0.465	0.7709	
60 minute summer	S-R7-8	1.006	S-R7-9	80.0	2.038	0.460	1.0146	
60 minute summer	S-R7-9	1.007	S-R7-10	78.0	1.151	0.439	1.6827	
60 minute summer	S-R7-10	1.008	S-R7-12	91.7	1.302	1.296	1.0504	
60 minute summer	J1	2.000	S-R7-4	2.2	0.699	0.116	0.0449	
60 minute summer	S-R7-12	1.009	S-R7-13	103.9	1.475	1.189	1.2137	
60 minute summer	S-R7-13	1.010	S-R7-14	108.5	1.542	1.530	0.8214	
60 minute summer	S-R7-14	1.011	S-R7-15	120.7	1.714	1.705	2.5977	
60 minute summer	J2	3.000	S-R7-6	2.4	0.709	0.103	0.1870	
60 minute summer	S-R7-1	1.000	S-R7-2	14.3	1.123	0.246	0.1661	
60 minute summer	S-R7-11	9.000	S-R7-12	26.5	1.197	0.075	0.5521	
60 minute summer	S-R7-5	4.000_1	S-R7-6	27.2	2.451	0.189	0.1971	
60 minute summer	S-R7-15	1.012	S-R7-HW	136.3	1.936	1.940	1.2497	216.2
60 minute summer	S-R7-16	4.001	S-R7-15	16.3	0.805	0.155	0.1059	
60 minute summer	S-R7-17	4.000	S-R7-16	-2.2	-0.171	-0.039	0.2954	
60 minute summer	J3	5.000	S-R7-7	2.2	0.589	0.149	0.0636	
60 minute summer	J4	6.000	S-R7-8	13.5	0.901	0.935	0.1471	
60 minute summer	J5	7.000	S-R7-9	19.4	1.252	0.469	0.0698	
60 minute summer	J6	8.000	S-R7-10	29.2	1.754	0.606	0.1459	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	J7	35	54.744	0.053	2.4	0.1071	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	J7	10.000	S-R7-13	2.7	1.113	0.042	0.0753	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R7-2	35	56.419	0.237	25.8	0.2682	0.0000	SURCHARGED
60 minute summer	S-R7-3	35	56.390	0.345	38.0	0.3904	0.0000	SURCHARGED
60 minute summer	S-R7-4	38	56.318	0.515	54.1	0.5823	0.0000	SURCHARGED
60 minute summer	S-R7-18	33	55.201	0.051	19.1	0.3597	0.0000	OK
60 minute summer	S-R7-6	38	56.217	0.953	99.4	1.0774	0.0000	SURCHARGED
60 minute summer	S-R7-7	38	56.079	0.937	110.3	1.0601	0.0000	SURCHARGED
60 minute summer	S-R7-8	38	56.007	1.157	110.5	1.3085	0.0000	FLOOD RISK
60 minute summer	S-R7-9	38	55.901	1.401	98.0	2.0050	0.0000	FLOOD RISK
60 minute summer	S-R7-10	38	55.712	1.818	112.6	2.6010	0.0000	FLOOD RISK
60 minute summer	J1	38	56.324	0.289	10.9	3.1773	0.0000	SURCHARGED
60 minute summer	S-R7-12	39	55.514	1.681	124.1	2.4057	0.0000	FLOOD RISK
60 minute summer	S-R7-13	39	55.211	1.485	134.3	2.1247	0.0000	SURCHARGED
60 minute summer	S-R7-14	37	54.966	1.288	145.3	1.8437	0.0000	SURCHARGED
60 minute summer	J2	42	56.195	0.406	15.6	7.7133	0.0000	SURCHARGED
60 minute summer	S-R7-HW	32	53.738	0.284	170.4	0.0000	0.0000	OK
60 minute summer	S-R7-1	33	56.460	0.115	26.0	0.1304	0.0000	OK
60 minute summer	S-R7-11	39	55.521	0.283	48.2	5.6997	0.0000	OK
60 minute summer	S-R7-5	36	56.414	0.099	55.5	9.9960	0.0000	OK
60 minute summer	S-R7-15	34	54.242	0.715	170.4	1.0226	0.0000	SURCHARGED
60 minute summer	S-R7-16	34	54.248	0.538	16.5	0.6085	0.0000	SURCHARGED
60 minute summer	S-R7-17	34	54.248	0.448	2.6	0.5067	0.0000	SURCHARGED
60 minute summer	J3	42	56.057	0.589	17.8	9.5671	0.0000	SURCHARGED
60 minute summer	J4	38	56.015	0.959	29.3	13.2316	0.0000	SURCHARGED
60 minute summer	J5	38	55.901	1.038	33.7	12.2259	0.0000	SURCHARGED
60 minute summer	J6	38	55.713	1.069	34.1	13.9570	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R7-2	1.001	S-R7-3	26.1	1.099	0.449	0.4356	
60 minute summer	S-R7-3	1.002	S-R7-4	36.9	1.291	0.634	0.7686	
60 minute summer	S-R7-4	1.003	S-R7-6	43.1	1.565	0.637	0.9541	
60 minute summer	S-R7-18	11.000	S-R7-14	19.1	1.336	0.116	0.3227	
60 minute summer	S-R7-6	1.004	S-R7-7	88.7	1.259	1.250	2.0903	
60 minute summer	S-R7-7	1.005	S-R7-8	97.0	2.005	0.541	0.9580	
60 minute summer	S-R7-8	1.006	S-R7-9	85.3	2.012	0.491	1.0146	
60 minute summer	S-R7-9	1.007	S-R7-10	90.7	1.287	0.511	1.6827	
60 minute summer	S-R7-10	1.008	S-R7-12	107.9	1.533	1.526	1.0504	
60 minute summer	J1	2.000	S-R7-4	10.8	0.686	0.566	0.2448	
60 minute summer	S-R7-12	1.009	S-R7-13	124.3	1.765	1.422	1.2137	
60 minute summer	S-R7-13	1.010	S-R7-14	134.8	1.915	1.900	0.8214	
60 minute summer	S-R7-14	1.011	S-R7-15	145.7	2.069	2.059	2.5977	
60 minute summer	J2	3.000	S-R7-6	17.9	1.018	0.773	0.3924	
60 minute summer	S-R7-1	1.000	S-R7-2	25.8	1.265	0.443	0.3696	
60 minute summer	S-R7-11	9.000	S-R7-12	44.6	1.187	0.126	0.9700	
60 minute summer	S-R7-5	4.000_1	S-R7-6	40.2	2.260	0.280	0.3420	
60 minute summer	S-R7-15	1.012	S-R7-HW	170.4	2.420	2.426	1.2617	393.5
60 minute summer	S-R7-16	4.001	S-R7-15	15.9	0.931	0.151	0.1059	
60 minute summer	S-R7-17	4.000	S-R7-16	-2.6	0.134	-0.046	0.2954	
60 minute summer	J3	5.000	S-R7-7	16.8	0.981	1.164	0.3057	
60 minute summer	J4	6.000	S-R7-8	-24.7	-1.405	-1.707	0.1471	
60 minute summer	J5	7.000	S-R7-9	-29.2	-1.661	-0.706	0.0698	
60 minute summer	J6	8.000	S-R7-10	37.0	2.143	0.769	0.1459	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	J7	39	55.213	0.522	21.2	8.3161	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	J7	10.000	S-R7-13	-16.9	1.064	-0.265	0.1142	

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	9.999
CV	0.950	Preferred Cover Depth (m)	1.250
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	550.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S-R13-1	0.024	5.00	61.432	1200	482682.490	167665.912	1.475
S-R13-2	0.140	5.00	61.319	1200	482664.534	167693.510	1.631
S-R13-3	0.070	5.00	60.997	1200	482655.604	167707.265	1.647
S-R13-26	0.055	5.00	60.567	1350	482625.481	167688.044	1.700
S-R13-27	0.082	5.00	60.365	1200	482602.649	167701.239	1.475
S-R13-28	0.061	5.00	60.206	1500	482601.957	167689.422	2.051
S-R13-20	0.055	5.00	60.425	1200	482599.655	167600.285	1.475
S-R13-21	0.008	5.00	60.453	1200	482606.473	167602.044	1.573
S-R13-22	0.121	5.00	60.610	1200	482633.689	167619.009	1.475
S-R13-23	0.004	5.00	60.716	1200	482617.530	167609.226	2.256
S-R13-24	0.051	5.00	60.207	1350	482601.288	167636.705	1.956
S-R13-25	0.048	5.00	60.056	1350	482599.445	167646.548	1.909
S-R13-29	0.052	5.00	59.968	1500	482599.798	167652.587	2.252
S-R13-30	0.082	5.00	59.817	1500	482545.531	167655.610	2.180
S-R13-31			59.929	1500	482541.843	167663.968	2.307
S-R13-32	0.114	5.00	59.376	1800	482545.518	167725.552	1.973
S-R13-15	0.011	5.00	61.182	1200	482668.730	167771.287	2.908
S-R13-16	0.082	5.00	60.872	1200	482644.530	167770.565	2.748
S-R13-17	0.081	5.00	60.459	1200	482612.532	167769.441	2.610
S-R13-18	0.075	5.00	60.723	1200	482604.241	167728.132	1.400
S-R13-19	0.051	5.00	60.382	1350	482606.330	167766.848	2.627
S-R13-33	0.130	5.00	59.717	1800	482547.712	167766.870	2.417
S-R13-34	0.014	5.00	59.460	1800	482547.289	167779.171	2.240
S-R13-35			59.056	1800	482544.118	167797.758	1.886
S-R13-36	0.015	5.00	58.492	1800	482545.026	167824.049	1.392
S-R13-37		5.00	59.460		482535.440	167670.797	0.455
S-R13-38			59.467		482534.749	167680.727	0.627
S-R13-39			59.201		482537.546	167719.548	0.523
S-R13-40			59.004		482538.298	167731.954	0.485
S-R13-41			59.312		482541.133	167771.668	1.015
S-R13-43			58.725		482536.139	167801.942	0.684
S-R13-44			58.313	1200	482535.475	167814.026	0.493
S-R13-45			58.420	1200	482536.734	167825.000	0.753
S-R13-46	0.028	5.00	58.277	1800	482541.743	167832.752	1.250
S-R13-HW1			58.200		482568.056	167850.638	1.550
S-R13-5	0.030	5.00	62.807	1200	482761.028	167731.034	1.475
S-R13-6	0.005	5.00	63.003	1200	482756.212	167717.267	1.758
S-R13-7	0.065	5.00	63.050	1200	482741.232	167699.436	1.475
S-R13-8			63.024	1200	482750.420	167710.168	1.833
S-R13-9			62.783	1200	482742.955	167715.804	1.652
S-R13-10	0.037	5.00	62.377	1200	482726.663	167725.172	1.357
S-R13-11	0.016	5.00	61.900	1200	482705.747	167732.694	2.500
S-R13-12	0.036	5.00	61.557	1200	482689.542	167736.003	2.832
S-R13-13	0.038	5.00	61.629	1200	482690.445	167741.886	2.969
S-R13-47	0.119	5.00	61.961	1200	482771.654	167800.763	1.261
S-R13-48	0.048	5.00	62.561	1200	482766.227	167763.957	1.475
S-R13-49	0.016	5.00	62.407	1200	482767.027	167780.550	1.807
S-R13-50	0.084	5.00	61.691	1200	482717.958	167782.844	1.449

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S-R13-51			61.499	1200	482704.600	167782.262	1.389
S-R13-52	0.039	5.00	61.298	1350	482690.995	167782.597	1.248
S-R13-53	0.028	5.00	60.988	1350	482691.042	167800.209	1.238
S-R13-54	0.051	5.00	60.849	1350	482689.944	167807.899	1.349
S-R13-55	0.013	5.00	60.598	1350	482690.124	167822.984	1.698
S-R13-56	0.098	5.00	60.476	1200	482703.334	167841.902	1.246
S-R13-57	0.034	5.00	60.301	1200	482695.628	167836.029	1.281
S-R13-58			60.373	1350	482687.221	167831.758	1.573
S-R13-59	0.035	5.00	60.296	1350	482675.338	167829.966	1.746
S-R13-60	0.034	5.00	59.889	1350	482643.216	167827.982	1.898
S-R13-61	0.090	5.00	59.337	1350	482600.386	167825.133	2.137
S-R13-62	0.102	5.00	58.984	1350	482580.637	167825.847	2.184
S-R13-HW2			58.200		482580.801	167849.375	1.550
S-R13-HW3		5.00	58.200		482564.594	167873.601	1.700
S-R13-64			58.200	1500	482561.362	167879.919	1.830
S-R13-HW4			58.496		482559.664	167885.638	2.244
S-R13-4	0.071	5.00	61.440	1350	482684.397	167726.660	2.450
S-R13-14	0.038	5.00	61.504	1350	482690.838	167770.988	3.019
S-R13-42			59.028		482537.886	167788.284	0.832
S-R13-30A	0.046	5.00	59.563	1200	482544.571	167638.385	1.250

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S-R13-1	S-R13-2	32.925	0.600	59.957	59.763	0.194	169.7	225	5.32	54.3
1.001	S-R13-2	S-R13-3	16.400	0.600	59.688	59.500	0.188	87.2	300	5.40	54.0
1.002	S-R13-3	S-R13-4	34.716	0.600	59.350	58.990	0.360	96.4	450	5.68	52.9
1.003	S-R13-4	S-R13-12	10.666	0.600	58.990	58.725	0.265	40.2	450	5.73	52.6
2.000	S-R13-5	S-R13-6	14.585	0.600	61.332	61.245	0.087	167.6	225	5.24	54.6
2.001	S-R13-6	S-R13-8	9.162	0.600	61.245	61.191	0.054	169.7	225	5.26	54.5
3.000	S-R13-7	S-R13-8	14.128	0.600	61.575	61.191	0.384	36.8	225	5.24	54.6
2.002	S-R13-8	S-R13-9	9.354	0.600	61.191	61.131	0.060	155.9	225	5.43	53.9
2.003	S-R13-9	S-R13-10	18.793	0.600	61.131	61.020	0.111	169.3	225	5.74	52.6
2.004	S-R13-10	S-R13-11	22.227	0.600	61.020	59.400	1.620	13.7	225	6.11	51.2
2.005	S-R13-11	S-R13-12	16.539	0.600	59.400	58.950	0.450	36.8	225	6.39	50.2
1.004	S-R13-12	S-R13-13	5.952	0.600	58.725	58.660	0.065	91.6	450	6.49	49.8
1.005	S-R13-13	S-R13-14	29.105	0.600	58.660	58.485	0.175	166.3	450	6.80	48.7
1.006	S-R13-14	S-R13-15	22.110	0.600	58.485	58.274	0.211	104.8	450	6.98	48.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.000	39.8	4.4	1.250	1.331	0.024	0.0	51	0.664
1.001	1.684	119.0	30.3	1.331	1.197	0.163	0.0	103	1.414
1.002	2.070	329.3	42.5	1.197	2.000	0.234	0.0	109	1.446
1.003	3.212	510.8	55.1	2.000	2.382	0.305	0.0	99	2.132
2.000	1.007	40.0	5.6	1.250	1.533	0.030	0.0	57	0.714
2.001	1.001	39.8	6.5	1.533	1.608	0.035	0.0	61	0.740
3.000	2.163	86.0	12.1	1.250	1.608	0.065	0.0	57	1.538
2.002	1.044	41.5	18.4	1.608	1.427	0.099	0.0	105	1.014
2.003	1.002	39.8	17.9	1.427	1.132	0.099	0.0	106	0.976
2.004	3.551	141.2	23.9	1.132	2.275	0.136	0.0	62	2.653
2.005	2.164	86.1	26.3	2.275	2.382	0.153	0.0	85	1.904
1.004	2.125	337.9	84.4	2.382	2.519	0.493	0.0	152	1.778
1.005	1.573	250.2	88.9	2.519	2.569	0.532	0.0	185	1.445
1.006	1.985	315.8	93.9	2.569	2.458	0.570	0.0	167	1.740

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.007	S-R13-15	S-R13-16	24.211	0.600	58.274	58.124	0.150	161.4	450	5.19	54.8
1.008	S-R13-16	S-R13-17	32.018	0.600	58.124	57.849	0.275	116.4	450	5.70	52.8
1.009	S-R13-17	S-R13-19	6.722	0.600	57.849	57.829	0.020	336.1	450	5.71	52.7
4.000	S-R13-18	S-R13-19	38.772	0.600	59.323	58.055	1.268	30.6	225	5.60	53.2
1.010	S-R13-19	S-R13-33	58.618	0.600	57.755	57.525	0.230	254.9	525	6.23	50.7
5.000	S-R13-20	S-R13-21	7.041	0.600	58.950	58.880	0.070	100.6	225	5.12	55.1
5.001	S-R13-21	S-R13-23	13.185	0.600	58.880	58.535	0.345	38.2	225	5.34	54.2
6.000	S-R13-22	S-R13-23	18.890	0.600	59.135	58.535	0.600	31.5	225	5.19	54.8
5.002	S-R13-23	S-R13-24	31.920	0.600	58.460	58.326	0.134	238.2	300	5.80	52.4
5.003	S-R13-24	S-R13-25	10.014	0.600	58.251	58.222	0.029	345.3	375	5.87	52.1
5.004	S-R13-25	S-R13-29	6.049	0.600	58.147	57.941	0.206	29.4	450	5.92	51.9
7.000	S-R13-26	S-R13-28	23.564	0.600	58.867	58.230	0.637	37.0	450	6.13	51.1
8.000	S-R13-27	S-R13-28	11.837	0.600	58.890	58.455	0.435	27.2	225	5.07	55.3
7.001	S-R13-28	S-R13-29	36.898	0.600	58.155	57.866	0.289	127.7	525	6.41	50.1
5.005	S-R13-29	S-R13-30	54.351	0.600	57.716	57.637	0.079	688.0	675	7.29	47.0
9.000	S-R13-30A	S-R13-30	17.252	0.600	58.313	58.012	0.301	57.3	300	5.14	55.0
5.006	S-R13-30	S-R13-31	9.136	0.600	57.637	57.622	0.015	609.1	675	7.35	46.8
5.007	S-R13-31	S-R13-32	61.694	0.600	57.622	57.478	0.144	428.4	675	8.32	43.9
5.008	S-R13-32	S-R13-33	41.376	0.600	57.403	57.300	0.103	401.7	750	9.06	41.9
1.011	S-R13-33	S-R13-34	12.308	0.600	57.300	57.220	0.080	153.9	750	9.10	41.8
1.012	S-R13-34	S-R13-35	18.856	0.600	57.220	57.170	0.050	377.1	750	9.35	41.4
1.013	S-R13-35	S-R13-36	26.307	0.600	57.170	57.100	0.070	375.8	750	9.63	40.5
1.014	S-R13-36	S-R13-46	9.302	0.600	57.100	57.027	0.073	127.4	750	9.73	40.3
10.000	S-R13-37	S-R13-38	9.962	0.600	59.005	58.840	0.165	60.4	500	5.04	55.3
10.001	S-R13-38	S-R13-39	38.927	0.600	58.840	58.678	0.162	240.3	500	5.32	54.2
10.002	S-R13-39	S-R13-40	12.441	0.600	58.678	58.519	0.159	78.2	500	5.37	54.1
10.003	S-R13-40	S-R13-41	39.815	0.600	58.519	58.297	0.222	179.3	225	6.06	51.4

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.007	1.597	254.0	109.3	2.458	2.298	0.581	0.0	206	1.540
1.008	1.883	299.5	120.1	2.298	2.160	0.663	0.0	198	1.785
1.009	1.103	175.4	134.6	2.160	2.103	0.744	0.0	297	1.211
4.000	2.374	94.4	13.7	1.175	2.102	0.075	0.0	58	1.702
1.010	1.398	302.7	151.4	2.102	1.667	0.870	0.0	263	1.399
5.000	1.303	51.8	10.4	1.250	1.348	0.055	0.0	68	1.023
5.001	2.122	84.4	11.8	1.348	1.956	0.064	0.0	57	1.508
6.000	2.340	93.0	22.8	1.250	1.956	0.121	0.0	76	1.948
5.002	1.014	71.7	33.9	1.956	1.581	0.188	0.0	145	1.000
5.003	0.969	107.0	42.9	1.581	1.459	0.240	0.0	165	0.918
5.004	3.762	598.3	51.2	1.459	1.577	0.288	0.0	88	2.343
7.000	3.350	532.9	9.6	1.250	1.526	0.055	0.0	42	1.326
8.000	2.518	100.1	15.5	1.250	1.526	0.082	0.0	59	1.836
7.001	1.981	428.7	34.1	1.526	1.577	0.198	0.0	99	1.203
5.005	0.991	354.8	86.7	1.577	1.505	0.537	0.0	226	0.825
9.000	2.080	147.1	8.6	0.950	1.505	0.046	0.0	49	1.152
5.006	1.054	377.3	106.9	1.505	1.632	0.665	0.0	245	0.913
5.007	1.260	450.7	100.2	1.632	1.223	0.665	0.0	215	1.023
5.008	1.390	614.0	112.1	1.223	1.667	0.779	0.0	215	1.069
1.011	2.253	995.5	255.3	1.667	1.490	1.779	0.0	257	1.902
1.012	1.435	633.8	254.8	1.490	1.136	1.792	0.0	330	1.360
1.013	1.437	635.0	249.2	1.136	0.642	1.792	0.0	326	1.354
1.014	2.477	1094.5	250.1	0.642	0.500	1.807	0.0	242	2.028
10.000	4.547	4547.5	1.0	-0.045	0.127	0.005	0.0	5	0.334
10.001	2.273	2273.0	1.0	0.127	0.023	0.005	0.0	8	0.221
10.002	3.993	3993.0	3.6	0.023	-0.015	0.019	0.0	12	0.509
10.003	0.973	38.7	3.7	0.260	0.790	0.021	0.0	46	0.612

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
10.004	S-R13-41	S-R13-42	16.936	0.600	58.297	58.196	0.101	167.7	500	6.16	51.0
10.005	S-R13-42	S-R13-43	13.773	0.600	58.196	58.041	0.155	88.9	500	6.22	50.4
10.006	S-R13-43	S-R13-44	12.102	0.600	58.041	57.820	0.221	54.8	500	6.26	50.3
10.007	S-R13-44	S-R13-45	11.046	0.600	57.820	57.667	0.153	72.2	150	6.57	49.5
10.008	S-R13-45	S-R13-46	9.229	0.600	57.667	57.627	0.040	230.7	150	6.62	49.3
1.015	S-R13-46	S-R13-HW1	31.816	0.600	57.027	56.650	0.377	84.4	750	10.25	39.1
11.000	S-R13-47	S-R13-49	20.736	0.600	60.700	60.600	0.100	207.4	300	5.34	54.2
12.000_1	S-R13-48	S-R13-49	16.612	0.600	61.086	60.675	0.411	40.4	225	5.22	54.7
11.001	S-R13-49	S-R13-50	49.123	0.600	60.600	60.242	0.358	137.2	300	5.99	51.6
11.002	S-R13-50	S-R13-51	13.371	0.600	60.242	60.185	0.057	234.6	300	6.10	51.2
11.003	S-R13-51	S-R13-52	13.609	0.600	60.110	60.050	0.060	226.8	375	6.14	51.1
11.004	S-R13-52	S-R13-53	17.612	0.600	60.050	59.750	0.300	58.7	375	7.46	46.5
11.005	S-R13-53	S-R13-54	7.768	0.600	59.750	59.500	0.250	31.1	375	7.59	46.1
11.006	S-R13-54	S-R13-55	15.086	0.600	59.500	58.900	0.600	25.1	375	7.84	45.3
11.007	S-R13-55	S-R13-58	9.242	0.600	58.900	58.800	0.100	92.4	375	7.99	44.8
12.000	S-R13-56	S-R13-57	9.689	0.600	59.230	59.170	0.060	161.5	225	5.16	54.9
13.001	S-R13-57	S-R13-58	9.430	0.600	59.020	58.800	0.220	42.9	375	5.25	54.6
11.008	S-R13-58	S-R13-59	12.017	0.600	58.800	58.550	0.250	48.1	375	8.19	44.2
11.009	S-R13-59	S-R13-60	32.183	0.600	58.550	57.991	0.559	57.6	375	8.72	42.8
11.010	S-R13-60	S-R13-61	42.925	0.600	57.991	57.275	0.716	60.0	375	9.43	41.0
11.011	S-R13-61	S-R13-62	19.762	0.600	57.200	56.800	0.400	49.4	450	9.53	40.7
11.012	S-R13-62	S-R13-HW2	23.529	0.600	56.800	56.650	0.150	156.9	450	9.69	40.4
14.000	S-R13-HW3	S-R13-64	7.231	0.600	56.500	56.370	0.130	55.6	225	5.14	55.0
14.001	S-R13-64	S-R13-HW4	5.966	0.600	56.370	56.252	0.118	50.6	225	5.28	54.5

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
10.004	2.723	2723.5	4.4	0.515	0.332	0.025	0.0	18	0.442
10.005	3.746	3746.2	4.4	0.332	0.184	0.025	0.0	15	0.548
10.006	4.776	4775.6	6.0	0.184	-0.007	0.035	0.0	15	0.701
10.007	1.185	20.9	5.9	0.343	0.603	0.035	0.0	55	1.023
10.008	0.657	11.6	5.9	0.603	0.500	0.035	0.0	76	0.660
1.015	3.047	1346.2	251.0	0.500	0.800	1.870	0.0	217	2.360
11.000	1.088	76.9	22.1	0.961	1.507	0.119	0.0	110	0.944
12.000_1	2.063	82.0	9.0	1.250	1.507	0.048	0.0	50	1.360
11.001	1.340	94.7	32.5	1.507	1.149	0.183	0.0	121	1.219
11.002	1.022	72.2	46.9	1.149	1.014	0.267	0.0	177	1.086
11.003	1.199	132.4	46.8	1.014	0.873	0.267	0.0	153	1.098
11.004	2.368	261.6	48.9	0.873	0.863	0.306	0.0	109	1.826
11.005	3.260	360.1	52.8	0.863	0.974	0.334	0.0	96	2.356
11.006	3.626	400.4	59.9	0.974	1.323	0.385	0.0	97	2.631
11.007	1.885	208.2	61.2	1.323	1.198	0.398	0.0	139	1.646
12.000	1.026	40.8	18.5	1.021	0.906	0.098	0.0	106	1.000
13.001	2.774	306.4	24.7	0.906	1.198	0.132	0.0	71	1.692
11.008	2.619	289.2	80.4	1.198	1.371	0.530	0.0	134	2.252
11.009	2.392	264.1	83.0	1.371	1.523	0.565	0.0	144	2.126
11.010	2.343	258.8	84.4	1.523	1.687	0.599	0.0	147	2.104
11.011	2.897	460.8	96.3	1.687	1.734	0.689	0.0	138	2.308
11.012	1.620	257.7	109.8	1.734	1.100	0.791	0.0	205	1.559
14.000	1.757	69.9	0.0	1.475	1.605	0.000	0.0	0	0.000
14.001	1.844	73.3	0.0	1.605	2.019	0.000	0.0	0	0.000

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	32.925	169.7	225	ADOPTABLE	61.432	59.957	1.250	61.319	59.763	1.331
1.001	16.400	87.2	300	ADOPTABLE	61.319	59.688	1.331	60.997	59.500	1.197
1.002	34.716	96.4	450	ADOPTABLE	60.997	59.350	1.197	61.440	58.990	2.000
1.003	10.666	40.2	450	ADOPTABLE	61.440	58.990	2.000	61.557	58.725	2.382
2.000	14.585	167.6	225	ADOPTABLE	62.807	61.332	1.250	63.003	61.245	1.533
2.001	9.162	169.7	225	ADOPTABLE	63.003	61.245	1.533	63.024	61.191	1.608
3.000	14.128	36.8	225	ADOPTABLE	63.050	61.575	1.250	63.024	61.191	1.608
2.002	9.354	155.9	225	ADOPTABLE	63.024	61.191	1.608	62.783	61.131	1.427
2.003	18.793	169.3	225	ADOPTABLE	62.783	61.131	1.427	62.377	61.020	1.132
2.004	22.227	13.7	225	ADOPTABLE	62.377	61.020	1.132	61.900	59.400	2.275
2.005	16.539	36.8	225	ADOPTABLE	61.900	59.400	2.275	61.557	58.950	2.382
1.004	5.952	91.6	450	ADOPTABLE	61.557	58.725	2.382	61.629	58.660	2.519
1.005	29.105	166.3	450	ADOPTABLE	61.629	58.660	2.519	61.504	58.485	2.569
1.006	22.110	104.8	450	ADOPTABLE	61.504	58.485	2.569	61.182	58.274	2.458
1.007	24.211	161.4	450	ADOPTABLE	61.182	58.274	2.458	60.872	58.124	2.298
1.008	32.018	116.4	450	ADOPTABLE	60.872	58.124	2.298	60.459	57.849	2.160
1.009	6.722	336.1	450	ADOPTABLE	60.459	57.849	2.160	60.382	57.829	2.103
4.000	38.772	30.6	225	ADOPTABLE	60.723	59.323	1.175	60.382	58.055	2.102
1.010	58.618	254.9	525	ADOPTABLE	60.382	57.755	2.102	59.717	57.525	1.667
5.000	7.041	100.6	225	ADOPTABLE	60.425	58.950	1.250	60.453	58.880	1.348
5.001	13.185	38.2	225	ADOPTABLE	60.453	58.880	1.348	60.716	58.535	1.956
6.000	18.890	31.5	225	ADOPTABLE	60.610	59.135	1.250	60.716	58.535	1.956
5.002	31.920	238.2	300	ADOPTABLE	60.716	58.460	1.956	60.207	58.326	1.581
5.003	10.014	345.3	375	ADOPTABLE	60.207	58.251	1.581	60.056	58.222	1.459
5.004	6.049	29.4	450	ADOPTABLE	60.056	58.147	1.459	59.968	57.941	1.577
7.000	23.564	37.0	450	ADOPTABLE	60.567	58.867	1.250	60.206	58.230	1.526
8.000	11.837	27.2	225	ADOPTABLE	60.365	58.890	1.250	60.206	58.455	1.526
7.001	36.898	127.7	525	ADOPTABLE	60.206	58.155	1.526	59.968	57.866	1.577

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S-R13-1	1200	Manhole	Adoptable	S-R13-2	1200	Manhole	Adoptable
1.001	S-R13-2	1200	Manhole	Adoptable	S-R13-3	1200	Manhole	Adoptable
1.002	S-R13-3	1200	Manhole	Adoptable	S-R13-4	1350	Manhole	Adoptable
1.003	S-R13-4	1350	Manhole	Adoptable	S-R13-12	1200	Manhole	Adoptable
2.000	S-R13-5	1200	Manhole	Adoptable	S-R13-6	1200	Manhole	Adoptable
2.001	S-R13-6	1200	Manhole	Adoptable	S-R13-8	1200	Manhole	Adoptable
3.000	S-R13-7	1200	Manhole	Adoptable	S-R13-8	1200	Manhole	Adoptable
2.002	S-R13-8	1200	Manhole	Adoptable	S-R13-9	1200	Manhole	Adoptable
2.003	S-R13-9	1200	Manhole	Adoptable	S-R13-10	1200	Manhole	Adoptable
2.004	S-R13-10	1200	Manhole	Adoptable	S-R13-11	1200	Manhole	Adoptable
2.005	S-R13-11	1200	Manhole	Adoptable	S-R13-12	1200	Manhole	Adoptable
1.004	S-R13-12	1200	Manhole	Adoptable	S-R13-13	1200	Manhole	Adoptable
1.005	S-R13-13	1200	Manhole	Adoptable	S-R13-14	1350	Manhole	Adoptable
1.006	S-R13-14	1350	Manhole	Adoptable	S-R13-15	1200	Manhole	Adoptable
1.007	S-R13-15	1200	Manhole	Adoptable	S-R13-16	1200	Manhole	Adoptable
1.008	S-R13-16	1200	Manhole	Adoptable	S-R13-17	1200	Manhole	Adoptable
1.009	S-R13-17	1200	Manhole	Adoptable	S-R13-19	1350	Manhole	Adoptable
4.000	S-R13-18	1200	Manhole	Adoptable	S-R13-19	1350	Manhole	Adoptable
1.010	S-R13-19	1350	Manhole	Adoptable	S-R13-33	1800	Manhole	Adoptable
5.000	S-R13-20	1200	Manhole	Adoptable	S-R13-21	1200	Manhole	Adoptable
5.001	S-R13-21	1200	Manhole	Adoptable	S-R13-23	1200	Manhole	Adoptable
6.000	S-R13-22	1200	Manhole	Adoptable	S-R13-23	1200	Manhole	Adoptable
5.002	S-R13-23	1200	Manhole	Adoptable	S-R13-24	1350	Manhole	Adoptable
5.003	S-R13-24	1350	Manhole	Adoptable	S-R13-25	1350	Manhole	Adoptable
5.004	S-R13-25	1350	Manhole	Adoptable	S-R13-29	1500	Manhole	Adoptable
7.000	S-R13-26	1350	Manhole	Adoptable	S-R13-28	1500	Manhole	Adoptable
8.000	S-R13-27	1200	Manhole	Adoptable	S-R13-28	1500	Manhole	Adoptable
7.001	S-R13-28	1500	Manhole	Adoptable	S-R13-29	1500	Manhole	Adoptable

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
5.005	54.351	688.0	675	ADOPTABLE	59.968	57.716	1.577	59.817	57.637	1.505
9.000	17.252	57.3	300	ADOPTABLE	59.563	58.313	0.950	59.817	58.012	1.505
5.006	9.136	609.1	675	ADOPTABLE	59.817	57.637	1.505	59.929	57.622	1.632
5.007	61.694	428.4	675	ADOPTABLE	59.929	57.622	1.632	59.376	57.478	1.223
5.008	41.376	401.7	750	ADOPTABLE	59.376	57.403	1.223	59.717	57.300	1.667
1.011	12.308	153.9	750	ADOPTABLE	59.717	57.300	1.667	59.460	57.220	1.490
1.012	18.856	377.1	750	ADOPTABLE	59.460	57.220	1.490	59.056	57.170	1.136
1.013	26.307	375.8	750	ADOPTABLE	59.056	57.170	1.136	58.492	57.100	0.642
1.014	9.302	127.4	750	ADOPTABLE	58.492	57.100	0.642	58.277	57.027	0.500
10.000	9.962	60.4	500	DRY SWALE	59.460	59.005	-0.045	59.467	58.840	0.127
10.001	38.927	240.3	500	DRY SWALE	59.467	58.840	0.127	59.201	58.678	0.023
10.002	12.441	78.2	500	DRY SWALE	59.201	58.678	0.023	59.004	58.519	-0.015
10.003	39.815	179.3	225	ADOPTABLE	59.004	58.519	0.260	59.312	58.297	0.790
10.004	16.936	167.7	500	DRY SWALE	59.312	58.297	0.515	59.028	58.196	0.332
10.005	13.773	88.9	500	DRY SWALE	59.028	58.196	0.332	58.725	58.041	0.184
10.006	12.102	54.8	500	DRY SWALE	58.725	58.041	0.184	58.313	57.820	-0.007
10.007	11.046	72.2	150	ADOPTABLE	58.313	57.820	0.343	58.420	57.667	0.603
10.008	9.229	230.7	150	ADOPTABLE	58.420	57.667	0.603	58.277	57.627	0.500
1.015	31.816	84.4	750	ADOPTABLE	58.277	57.027	0.500	58.200	56.650	0.800
11.000	20.736	207.4	300	ADOPTABLE	61.961	60.700	0.961	62.407	60.600	1.507
12.000_1	16.612	40.4	225	ADOPTABLE	62.561	61.086	1.250	62.407	60.675	1.507
11.001	49.123	137.2	300	ADOPTABLE	62.407	60.600	1.507	61.691	60.242	1.149
11.002	13.371	234.6	300	ADOPTABLE	61.691	60.242	1.149	61.499	60.185	1.014
11.003	13.609	226.8	375	ADOPTABLE	61.499	60.110	1.014	61.298	60.050	0.873
11.004	17.612	58.7	375	ADOPTABLE	61.298	60.050	0.873	60.988	59.750	0.863
11.005	7.768	31.1	375	ADOPTABLE	60.988	59.750	0.863	60.849	59.500	0.974
11.006	15.086	25.1	375	ADOPTABLE	60.849	59.500	0.974	60.598	58.900	1.323
11.007	9.242	92.4	375	ADOPTABLE	60.598	58.900	1.323	60.373	58.800	1.198

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
5.005	S-R13-29	1500	Manhole	Adoptable	S-R13-30	1500	Manhole	Adoptable
9.000	S-R13-30A	1200	Manhole	Adoptable	S-R13-30	1500	Manhole	Adoptable
5.006	S-R13-30	1500	Manhole	Adoptable	S-R13-31	1500	Manhole	Adoptable
5.007	S-R13-31	1500	Manhole	Adoptable	S-R13-32	1800	Manhole	Adoptable
5.008	S-R13-32	1800	Manhole	Adoptable	S-R13-33	1800	Manhole	Adoptable
1.011	S-R13-33	1800	Manhole	Adoptable	S-R13-34	1800	Manhole	Adoptable
1.012	S-R13-34	1800	Manhole	Adoptable	S-R13-35	1800	Manhole	Adoptable
1.013	S-R13-35	1800	Manhole	Adoptable	S-R13-36	1800	Manhole	Adoptable
1.014	S-R13-36	1800	Manhole	Adoptable	S-R13-46	1800	Manhole	Adoptable
10.000	S-R13-37		Junction		S-R13-38		Junction	
10.001	S-R13-38		Junction		S-R13-39		Junction	
10.002	S-R13-39		Junction		S-R13-40		Junction	
10.003	S-R13-40		Junction		S-R13-41		Junction	
10.004	S-R13-41		Junction		S-R13-42		Junction	
10.005	S-R13-42		Junction		S-R13-43		Junction	
10.006	S-R13-43		Junction		S-R13-44	1200	Manhole	Adoptable
10.007	S-R13-44	1200	Manhole	Adoptable	S-R13-45	1200	Manhole	Adoptable
10.008	S-R13-45	1200	Manhole	Adoptable	S-R13-46	1800	Manhole	Adoptable
1.015	S-R13-46	1800	Manhole	Adoptable	S-R13-HW1		Junction	
11.000	S-R13-47	1200	Manhole	Adoptable	S-R13-49	1200	Manhole	Adoptable
12.000_1	S-R13-48	1200	Manhole	Adoptable	S-R13-49	1200	Manhole	Adoptable
11.001	S-R13-49	1200	Manhole	Adoptable	S-R13-50	1200	Manhole	Adoptable
11.002	S-R13-50	1200	Manhole	Adoptable	S-R13-51	1200	Manhole	Adoptable
11.003	S-R13-51	1200	Manhole	Adoptable	S-R13-52	1350	Manhole	Adoptable
11.004	S-R13-52	1350	Manhole	Adoptable	S-R13-53	1350	Manhole	Adoptable
11.005	S-R13-53	1350	Manhole	Adoptable	S-R13-54	1350	Manhole	Adoptable
11.006	S-R13-54	1350	Manhole	Adoptable	S-R13-55	1350	Manhole	Adoptable
11.007	S-R13-55	1350	Manhole	Adoptable	S-R13-58	1350	Manhole	Adoptable

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
12.000	9.689	161.5	225	ADOPTABLE	60.476	59.230	1.021	60.301	59.170	0.906
13.001	9.430	42.9	375	ADOPTABLE	60.301	59.020	0.906	60.373	58.800	1.198
11.008	12.017	48.1	375	ADOPTABLE	60.373	58.800	1.198	60.296	58.550	1.371
11.009	32.183	57.6	375	ADOPTABLE	60.296	58.550	1.371	59.889	57.991	1.523
11.010	42.925	60.0	375	ADOPTABLE	59.889	57.991	1.523	59.337	57.275	1.687
11.011	19.762	49.4	450	ADOPTABLE	59.337	57.200	1.687	58.984	56.800	1.734
11.012	23.529	156.9	450	ADOPTABLE	58.984	56.800	1.734	58.200	56.650	1.100
14.000	7.231	55.6	225	ADOPTABLE	58.200	56.500	1.475	58.200	56.370	1.605
14.001	5.966	50.6	225	ADOPTABLE	58.200	56.370	1.605	58.496	56.252	2.019

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
12.000	S-R13-56	1200	Manhole	Adoptable	S-R13-57	1200	Manhole	Adoptable
13.001	S-R13-57	1200	Manhole	Adoptable	S-R13-58	1350	Manhole	Adoptable
11.008	S-R13-58	1350	Manhole	Adoptable	S-R13-59	1350	Manhole	Adoptable
11.009	S-R13-59	1350	Manhole	Adoptable	S-R13-60	1350	Manhole	Adoptable
11.010	S-R13-60	1350	Manhole	Adoptable	S-R13-61	1350	Manhole	Adoptable
11.011	S-R13-61	1350	Manhole	Adoptable	S-R13-62	1350	Manhole	Adoptable
11.012	S-R13-62	1350	Manhole	Adoptable	S-R13-HW2		Junction	
14.000	S-R13-HW3		Junction		S-R13-64	1500	Manhole	Adoptable
14.001	S-R13-64	1500	Manhole	Adoptable	S-R13-HW4		Junction	

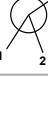
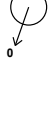
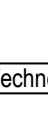
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S-R13-1	482682.490	167665.912	61.432	1.475	1200		0	1.000	59.957	225
S-R13-2	482664.534	167693.510	61.319	1.631	1200		1	1.000	59.763	225
S-R13-3	482655.604	167707.265	60.997	1.647	1200		0	1.001	59.688	300
S-R13-26	482625.481	167688.044	60.567	1.700	1350		1	1.001	59.500	300
S-R13-27	482602.649	167701.239	60.365	1.475	1200		0	1.002	59.350	450
S-R13-28	482601.957	167689.422	60.206	2.051	1500		0	7.000	58.867	450
S-R13-20	482599.655	167600.285	60.425	1.475	1200		0	8.000	58.890	225
S-R13-21	482606.473	167602.044	60.453	1.573	1200		1	8.000	58.455	225
							2	7.000	58.230	450
							0	7.001	58.155	525
							0	5.000	58.950	225
							1	5.000	58.880	225
							0	5.001	58.880	225

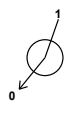
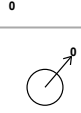
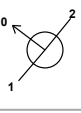
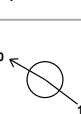
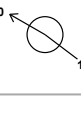
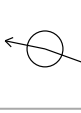
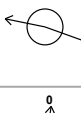
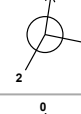
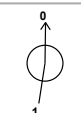
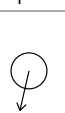
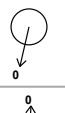
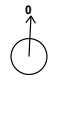
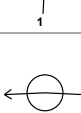
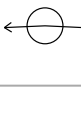
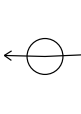
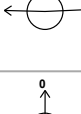
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S-R13-22	482633.689	167619.009	60.610	1.475	1200				
						0	6.000	59.135	225
S-R13-23	482617.530	167609.226	60.716	2.256	1200				
						1	6.000	58.535	225
						2	5.001	58.535	225
						0	5.002	58.460	300
S-R13-24	482601.288	167636.705	60.207	1.956	1350				
						1	5.002	58.326	300
						0	5.003	58.251	375
S-R13-25	482599.445	167646.548	60.056	1.909	1350				
						1	5.003	58.222	375
						0	5.004	58.147	450
S-R13-29	482599.798	167652.587	59.968	2.252	1500				
						1	7.001	57.866	525
						2	5.004	57.941	450
						0	5.005	57.716	675
S-R13-30	482545.531	167655.610	59.817	2.180	1500				
						1	9.000	58.012	300
						2	5.005	57.637	675
						0	5.006	57.637	675
S-R13-31	482541.843	167663.968	59.929	2.307	1500				
						1	5.006	57.622	675
						0	5.007	57.622	675
S-R13-32	482545.518	167725.552	59.376	1.973	1800				
						1	5.007	57.478	675
						0	5.008	57.403	750
S-R13-15	482668.730	167771.287	61.182	2.908	1200				
						1	1.006	58.274	450
						0	1.007	58.274	450
S-R13-16	482644.530	167770.565	60.872	2.748	1200				
						1	1.007	58.124	450
						0	1.008	58.124	450
S-R13-17	482612.532	167769.441	60.459	2.610	1200				
						1	1.008	57.849	450
						0	1.009	57.849	450
S-R13-18	482604.241	167728.132	60.723	1.400	1200				
						0	4.000	59.323	225
S-R13-19	482606.330	167766.848	60.382	2.627	1350				
						1	4.000	58.055	225
						2	1.009	57.829	450
						0	1.010	57.755	525
S-R13-33	482547.712	167766.870	59.717	2.417	1800				
						1	5.008	57.300	750
						2	1.010	57.525	525
						0	1.011	57.300	750

Manhole Schedule

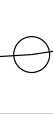
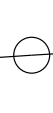
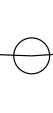
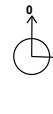
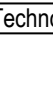
Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S-R13-34	482547.289	167779.171	59.460	2.240	1800		1.011	57.220	750
S-R13-35	482544.118	167797.758	59.056	1.886	1800		1.012	57.220	750
S-R13-36	482545.026	167824.049	58.492	1.392	1800		1.013	57.170	750
S-R13-37	482535.440	167670.797	59.460	0.455			1.014	57.100	750
S-R13-38	482534.749	167680.727	59.467	0.627			10.000	59.005	500
S-R13-39	482537.546	167719.548	59.201	0.523			10.001	58.840	500
S-R13-40	482538.298	167731.954	59.004	0.485			10.002	58.678	500
S-R13-41	482541.133	167771.668	59.312	1.015			10.003	58.519	225
S-R13-43	482536.139	167801.942	58.725	0.684			10.004	58.297	500
S-R13-44	482535.475	167814.026	58.313	0.493	1200		10.005	58.041	500
S-R13-45	482536.734	167825.000	58.420	0.753	1200		10.006	57.820	500
S-R13-46	482541.743	167832.752	58.277	1.250	1800		10.007	57.667	150
S-R13-HW1	482568.056	167850.638	58.200	1.550			10.008	57.627	150
S-R13-5	482761.028	167731.034	62.807	1.475	1200		1.014	57.027	750
							1.015	57.027	750
							2.000	61.332	225

Manhole Schedule

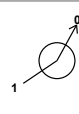
Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S-R13-6	482756.212	167717.267	63.003	1.758	1200	 1	2.000	61.245	225
						 0	2.001	61.245	225
S-R13-7	482741.232	167699.436	63.050	1.475	1200	 0	3.000	61.575	225
S-R13-8	482750.420	167710.168	63.024	1.833	1200	 1 2	3.000 2.001	61.191 61.191	225 225
						 0	2.002	61.191	225
S-R13-9	482742.955	167715.804	62.783	1.652	1200	 1	2.002	61.131	225
						 0	2.003	61.131	225
S-R13-10	482726.663	167725.172	62.377	1.357	1200	 1	2.003	61.020	225
						 0	2.004	61.020	225
S-R13-11	482705.747	167732.694	61.900	2.500	1200	 1	2.004	59.400	225
						 0	2.005	59.400	225
S-R13-12	482689.542	167736.003	61.557	2.832	1200	 1 2	2.005 1.003	58.950 58.725	225 450
						 0	1.004	58.725	450
S-R13-13	482690.445	167741.886	61.629	2.969	1200	 1	1.004	58.660	450
						 0	1.005	58.660	450
S-R13-47	482771.654	167800.763	61.961	1.261	1200	 0	11.000	60.700	300
S-R13-48	482766.227	167763.957	62.561	1.475	1200	 0	12.000_1	61.086	225
S-R13-49	482767.027	167780.550	62.407	1.807	1200	 1 2	12.000_1 11.000	60.675 60.600	225 300
						 0	11.001	60.600	300
S-R13-50	482717.958	167782.844	61.691	1.449	1200	 1	11.001	60.242	300
						 0	11.002	60.242	300
S-R13-51	482704.600	167782.262	61.499	1.389	1200	 1	11.002	60.185	300
						 0	11.003	60.110	375
S-R13-52	482690.995	167782.597	61.298	1.248	1350	 1	11.003	60.050	375
						 0	11.004	60.050	375



Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S-R13-53	482691.042	167800.209	60.988	1.238	1350	 1	11.004	59.750	375
S-R13-54	482689.944	167807.899	60.849	1.349	1350	 1	11.005	59.750	375
S-R13-55	482690.124	167822.984	60.598	1.698	1350	 1	11.006	59.500	375
S-R13-56	482703.334	167841.902	60.476	1.246	1200	 0	11.007	58.900	375
S-R13-57	482695.628	167836.029	60.301	1.281	1200	 1	12.000	59.230	225
S-R13-58	482687.221	167831.758	60.373	1.573	1350	 1	13.001	59.020	375
S-R13-59	482675.338	167829.966	60.296	1.746	1350	 2	13.001	58.800	375
S-R13-60	482643.216	167827.982	59.889	1.898	1350	 0	11.007	58.800	375
S-R13-61	482600.386	167825.133	59.337	2.137	1350	 1	11.008	58.800	375
S-R13-62	482580.637	167825.847	58.984	2.184	1350	 0	11.008	58.550	375
S-R13-HW2	482580.801	167849.375	58.200	1.550		 1	11.009	58.550	375
S-R13-HW3	482564.594	167873.601	58.200	1.700		 0	11.009	57.991	375
S-R13-64	482561.362	167879.919	58.200	1.830	1500	 1	11.010	57.991	375
S-R13-HW4	482559.664	167885.638	58.496	2.244		 0	11.010	57.275	375
						 1	11.011	57.200	450
						 1	11.011	56.800	450
						0	11.012	56.800	450
						1	11.012	56.650	450
						0	14.000	56.500	225
						1	14.000	56.370	225
						0	14.001	56.370	225
						1	14.001	56.252	225

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S-R13-4	482684.397	167726.660	61.440	2.450	1350		1	1.002	58.990	450
							0	1.003	58.990	450
S-R13-14	482690.838	167770.988	61.504	3.019	1350		1	1.005	58.485	450
							0	1.006	58.485	450
S-R13-42	482537.886	167788.284	59.028	0.832			1	10.004	58.196	500
							0	10.005	58.196	500
S-R13-30A	482544.571	167638.385	59.563	1.250	1200					
							0	9.000	58.313	300

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.950	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.950	Additional Storage (m³/ha)	0.0		

Storm Durations

60	180	360	600	960	2160	4320	7200	10080
120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0	100	40	0	0
30	0	0	0				

Node S-R13-HW2 Online Orifice Control

Flap Valve	x	Invert Level (m)	56.650	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.450		

Node S-R13-HW1 Online Orifice Control

Flap Valve	x	Invert Level (m)	56.650	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.750		

Node S-R13-64 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	56.370	Product Number	CTL-SHE-0163-1400-1443-1400
Design Depth (m)	1.443	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	14.0	Min Node Diameter (mm)	1500

Node S-R13-HW3 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	29.194
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	56.500	Main Channel Slope (1:X)	195.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.035

Inlets

S-R13-HW2 | S-R13-HW1

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	1573.9	1573.9	1.700	3086.1	3991.6

Node Carpark 1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.000	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.710
Safety Factor	2.0	Width (m)	12.990	Inf Depth (m)	
Porosity	1.00	Length (m)	31.335		

Node Carpark 2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.000	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.710
Safety Factor	2.0	Width (m)	4.525	Inf Depth (m)	
Porosity	1.00	Length (m)	73.905		

Node S-R13-47 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	60.700	Slope (1:X)	60.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.450
Safety Factor	2.0	Width (m)	15.000	Inf Depth (m)	
Porosity	1.00	Length (m)	21.500		

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R13-1	33	59.996	0.039	2.6	0.0441	0.0000	OK
60 minute summer	S-R13-2	33	59.770	0.082	18.0	0.0932	0.0000	OK
60 minute summer	S-R13-3	33	59.437	0.087	25.7	0.0986	0.0000	OK
60 minute summer	S-R13-26	33	58.901	0.034	6.1	0.0489	0.0000	OK
60 minute summer	S-R13-27	33	58.937	0.047	9.0	0.0536	0.0000	OK
60 minute summer	S-R13-28	33	58.236	0.081	21.9	0.1438	0.0000	OK
60 minute summer	S-R13-20	33	59.006	0.056	6.1	0.0628	0.0000	OK
60 minute summer	S-R13-21	33	58.925	0.045	7.0	0.0511	0.0000	OK
60 minute summer	S-R13-22	33	59.194	0.059	13.3	0.0671	0.0000	OK
60 minute summer	S-R13-23	33	58.573	0.113	20.7	0.1281	0.0000	OK
60 minute summer	S-R13-24	33	58.383	0.132	26.3	0.1894	0.0000	OK
60 minute summer	S-R13-25	33	58.226	0.079	31.6	0.1126	0.0000	OK
60 minute summer	S-R13-29	34	57.905	0.189	59.0	0.3343	0.0000	OK
60 minute summer	S-R13-30	34	57.842	0.205	72.2	0.3627	0.0000	OK
60 minute summer	S-R13-31	35	57.805	0.183	71.5	0.3237	0.0000	OK
60 minute summer	S-R13-32	35	57.606	0.203	81.7	0.5161	0.0000	OK
60 minute summer	S-R13-15	34	58.436	0.162	63.3	0.1832	0.0000	OK
60 minute summer	S-R13-16	34	58.278	0.154	72.1	0.1742	0.0000	OK
60 minute summer	S-R13-17	34	58.078	0.229	80.7	0.2585	0.0000	OK
60 minute summer	S-R13-18	33	59.369	0.046	8.3	0.0515	0.0000	OK
60 minute summer	S-R13-19	34	57.960	0.205	93.9	0.2929	0.0000	OK
60 minute summer	S-R13-33	35	57.582	0.282	186.9	0.7169	0.0000	OK
60 minute summer	S-R13-34	35	57.527	0.307	188.2	0.7819	0.0000	OK
60 minute summer	S-R13-35	35	57.452	0.282	187.9	0.7178	0.0000	OK
60 minute summer	S-R13-36	36	57.341	0.241	188.5	0.6136	0.0000	OK
60 minute summer	S-R13-37	1	59.005	0.000	0.0	0.0000	0.0000	OK
60 minute summer	10.000:50%	34	58.927	0.004	0.6	0.0000	0.0000	OK
60 minute summer	S-R13-38	34	58.846	0.006	0.6	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R13-1	1.000	S-R13-2	2.6	0.565	0.064	0.1494	
60 minute summer	S-R13-2	1.001	S-R13-3	17.9	1.188	0.151	0.2479	
60 minute summer	S-R13-3	1.002	S-R13-4	25.7	1.276	0.078	0.7007	
60 minute summer	S-R13-26	7.000	S-R13-28	6.1	1.131	0.011	0.1271	
60 minute summer	S-R13-27	8.000	S-R13-28	9.0	1.529	0.090	0.0697	
60 minute summer	S-R13-28	7.001	S-R13-29	21.8	1.050	0.051	0.7671	
60 minute summer	S-R13-20	5.000	S-R13-21	6.1	0.922	0.118	0.0467	
60 minute summer	S-R13-21	5.001	S-R13-23	7.0	1.266	0.083	0.0730	
60 minute summer	S-R13-22	6.000	S-R13-23	13.3	1.634	0.143	0.1537	
60 minute summer	S-R13-23	5.002	S-R13-24	20.6	0.872	0.288	0.7562	
60 minute summer	S-R13-24	5.003	S-R13-25	26.3	0.825	0.245	0.3190	
60 minute summer	S-R13-25	5.004	S-R13-29	31.5	1.856	0.053	0.1027	
60 minute summer	S-R13-29	5.005	S-R13-30	58.7	0.682	0.165	4.7118	
60 minute summer	S-R13-30	5.006	S-R13-31	71.5	0.854	0.190	0.7731	
60 minute summer	S-R13-31	5.007	S-R13-32	70.9	0.983	0.157	4.4552	
60 minute summer	S-R13-32	5.008	S-R13-33	81.5	0.668	0.133	5.1091	
60 minute summer	S-R13-15	1.007	S-R13-16	63.5	1.280	0.250	1.2016	
60 minute summer	S-R13-16	1.008	S-R13-17	72.2	1.126	0.241	2.0611	
60 minute summer	S-R13-17	1.009	S-R13-19	80.6	1.094	0.459	0.4951	
60 minute summer	S-R13-18	4.000	S-R13-19	8.3	1.462	0.088	0.2199	
60 minute summer	S-R13-19	1.010	S-R13-33	93.3	1.239	0.308	4.4178	
60 minute summer	S-R13-33	1.011	S-R13-34	186.9	1.166	0.188	1.9735	
60 minute summer	S-R13-34	1.012	S-R13-35	187.9	1.171	0.296	3.0260	
60 minute summer	S-R13-35	1.013	S-R13-36	187.1	1.374	0.295	3.5911	
60 minute summer	S-R13-36	1.014	S-R13-46	189.0	1.751	0.173	1.0059	
60 minute summer	S-R13-37	10.000	10.000:50%	0.0	0.000	0.000	0.0052	
60 minute summer	S-R13-37	10.000	S-R13-38	0.6	0.235	0.000	0.0135	
60 minute summer	S-R13-38	10.001	S-R13-39	0.6	0.214	0.000	0.1071	



Results for 2 year Critical Storm Duration. Lowest mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R13-39	35	58.682	0.004	0.6	0.0000	0.0000	OK
60 minute summer	10.002:50%	33	58.607	0.009	2.0	0.0000	0.0000	OK
60 minute summer	S-R13-40	34	58.554	0.035	2.0	0.0000	0.0000	OK
60 minute summer	10.003:50%	34	58.448	0.040	2.2	0.0000	0.0000	OK
60 minute summer	S-R13-41	34	58.309	0.012	2.2	0.0000	0.0000	OK
60 minute summer	10.004:50%	34	58.260	0.013	2.7	0.0049	0.0000	OK
60 minute summer	S-R13-43	35	58.051	0.010	2.6	0.0000	0.0000	OK
60 minute summer	10.006:50%	34	57.942	0.011	3.6	0.0055	0.0000	OK
60 minute summer	S-R13-44	35	57.862	0.042	3.6	0.0476	0.0000	OK
60 minute summer	S-R13-45	35	57.727	0.060	3.6	0.0677	0.0000	OK
60 minute summer	S-R13-46	36	57.227	0.200	194.8	0.5094	0.0000	OK
60 minute summer	S-R13-HW1	36	56.966	0.317	195.4	0.0000	0.0000	OK
60 minute summer	S-R13-5	33	61.376	0.044	3.3	0.0503	0.0000	OK
60 minute summer	S-R13-6	33	61.292	0.047	3.8	0.0527	0.0000	OK
60 minute summer	S-R13-7	33	61.619	0.044	7.1	0.0493	0.0000	OK
60 minute summer	S-R13-8	33	61.276	0.085	10.9	0.0958	0.0000	OK
60 minute summer	S-R13-9	33	61.216	0.085	10.9	0.0957	0.0000	OK
60 minute summer	S-R13-10	33	61.069	0.049	14.9	0.0556	0.0000	OK
60 minute summer	S-R13-11	33	59.470	0.070	16.7	0.0790	0.0000	OK
60 minute summer	S-R13-12	33	58.875	0.150	54.0	0.1695	0.0000	OK
60 minute summer	S-R13-13	33	58.814	0.154	58.1	0.1741	0.0000	OK
60 minute summer	S-R13-47	35	60.776	0.076	13.1	2.7029	0.0000	OK
60 minute summer	S-R13-48	33	61.126	0.040	5.3	0.0448	0.0000	OK
60 minute summer	S-R13-49	34	60.685	0.085	16.9	0.0956	0.0000	OK
60 minute summer	S-R13-50	34	60.373	0.131	25.4	0.1481	0.0000	OK
60 minute summer	S-R13-51	34	60.224	0.114	25.3	0.1290	0.0000	OK
60 minute summer	S-R13-52	34	60.139	0.089	29.4	0.1274	0.0000	OK
60 minute summer	S-R13-53	34	59.834	0.084	32.3	0.1195	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R13-39	10.002	10.002:50%	0.6	0.175	0.000	0.0212	
60 minute summer	S-R13-39	10.002	S-R13-40	2.0	0.165	0.001	0.0794	
60 minute summer	S-R13-40	10.003	10.003:50%	2.0	0.467	0.052	0.0855	
60 minute summer	S-R13-40	10.003	S-R13-41	2.2	0.871	0.057	0.0551	
60 minute summer	S-R13-41	10.004	10.004:50%	2.2	0.322	0.001	0.0576	
60 minute summer	S-R13-41	10.004	S-R13-42	2.7	0.404	0.001	0.0561	
60 minute summer	S-R13-43	10.006	10.006:50%	2.7	0.480	0.001	0.0335	
60 minute summer	S-R13-43	10.006	S-R13-44	3.6	0.234	0.001	0.0981	
60 minute summer	S-R13-44	10.007	S-R13-45	3.6	0.689	0.172	0.0585	
60 minute summer	S-R13-45	10.008	S-R13-46	3.6	0.586	0.310	0.0567	
60 minute summer	S-R13-46	1.015	S-R13-HW1	195.4	1.456	0.145	4.3085	
60 minute summer	S-R13-HW1	Flow through Pond	S-R13-HW3	266.9	0.085	0.001	271.8377	
60 minute summer	S-R13-5	2.000	S-R13-6	3.3	0.576	0.082	0.0836	
60 minute summer	S-R13-6	2.001	S-R13-8	3.8	0.394	0.095	0.0897	
60 minute summer	S-R13-7	3.000	S-R13-8	7.1	0.771	0.083	0.1344	
60 minute summer	S-R13-8	2.002	S-R13-9	10.9	0.796	0.261	0.1276	
60 minute summer	S-R13-9	2.003	S-R13-10	10.8	1.098	0.271	0.1881	
60 minute summer	S-R13-10	2.004	S-R13-11	14.9	1.774	0.105	0.1875	
60 minute summer	S-R13-11	2.005	S-R13-12	16.6	1.634	0.192	0.1677	
60 minute summer	S-R13-12	1.004	S-R13-13	53.9	1.146	0.159	0.2798	
60 minute summer	S-R13-13	1.005	S-R13-14	57.9	1.271	0.231	1.3281	
60 minute summer	S-R13-47	11.000	S-R13-49	10.4	0.699	0.135	0.3139	
60 minute summer	S-R13-48	12.000_1	S-R13-49	5.3	1.151	0.065	0.0765	
60 minute summer	S-R13-49	11.001	S-R13-50	16.7	0.741	0.177	1.1246	
60 minute summer	S-R13-50	11.002	S-R13-51	25.3	0.903	0.351	0.3754	
60 minute summer	S-R13-51	11.003	S-R13-52	25.3	1.056	0.191	0.3284	
60 minute summer	S-R13-52	11.004	S-R13-53	29.4	1.538	0.112	0.3365	
60 minute summer	S-R13-53	11.005	S-R13-54	32.2	1.875	0.089	0.1336	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R13-54	34	59.577	0.077	37.5	0.1098	0.0000	OK
60 minute summer	S-R13-55	34	59.023	0.123	38.9	0.1754	0.0000	OK
60 minute summer	S-R13-56	33	59.314	0.084	10.8	0.0950	0.0000	OK
60 minute summer	S-R13-57	33	59.075	0.055	14.5	0.0622	0.0000	OK
60 minute summer	S-R13-58	34	58.918	0.118	52.9	0.1694	0.0000	OK
60 minute summer	S-R13-59	34	58.671	0.121	56.6	0.1731	0.0000	OK
60 minute summer	S-R13-60	34	58.117	0.126	60.3	0.1808	0.0000	OK
60 minute summer	S-R13-61	34	57.320	0.120	69.4	0.1722	0.0000	OK
60 minute summer	S-R13-62	34	56.982	0.182	80.1	0.2610	0.0000	OK
60 minute summer	S-R13-HW2	34	56.895	0.246	80.0	0.0000	0.0000	OK
360 minute summer	S-R13-HW3	296	56.831	0.331	66.5	0.0000	0.0000	SURCHARGED
360 minute summer	S-R13-64	296	56.824	0.454	25.1	0.8018	0.0000	SURCHARGED
360 minute summer	S-R13-HW4	296	56.318	0.066	14.0	0.0000	0.0000	OK
60 minute summer	S-R13-4	33	59.070	0.080	33.5	0.1140	0.0000	OK
60 minute summer	S-R13-14	34	58.628	0.143	62.1	0.2053	0.0000	OK
60 minute summer	S-R13-42	34	58.207	0.011	2.7	0.0000	0.0000	OK
60 minute summer	S-R13-30A	33	58.352	0.039	5.0	0.0436	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R13-54	11.006	S-R13-55	37.5	1.602	0.094	0.3576	
60 minute summer	S-R13-55	11.007	S-R13-58	38.9	1.281	0.187	0.2821	
60 minute summer	S-R13-56	12.000	S-R13-57	10.8	0.838	0.265	0.1249	
60 minute summer	S-R13-57	13.001	S-R13-58	14.5	0.781	0.047	0.1863	
60 minute summer	S-R13-58	11.008	S-R13-59	52.9	1.750	0.183	0.3633	
60 minute summer	S-R13-59	11.009	S-R13-60	56.7	1.792	0.215	1.0180	
60 minute summer	S-R13-60	11.010	S-R13-61	60.0	1.895	0.232	1.3605	
60 minute summer	S-R13-61	11.011	S-R13-62	69.4	1.487	0.151	0.9312	
60 minute summer	S-R13-62	11.012	S-R13-HW2	80.0	1.077	0.311	1.7491	
60 minute summer	S-R13-HW2	Flow through Pond	S-R13-HW3	266.9	0.085	0.001	271.8377	
60 minute summer	S-R13-HW3	14.000	S-R13-64	27.6	0.784	0.396	0.2876	
360 minute summer	S-R13-64	14.001	S-R13-HW4	14.0	1.381	0.191	0.0603	417.1
60 minute summer	S-R13-4	1.003	S-R13-12	33.5	1.054	0.066	0.3467	
60 minute summer	S-R13-14	1.006	S-R13-15	62.2	1.313	0.197	1.0478	
60 minute summer	S-R13-42	10.005	S-R13-43	2.6	0.483	0.001	0.0756	
60 minute summer	S-R13-30A	9.000	S-R13-30	5.0	0.965	0.034	0.0894	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R13-1	33	60.024	0.067	7.8	0.0762	0.0000	OK
60 minute summer	S-R13-2	33	59.841	0.153	53.2	0.1732	0.0000	OK
60 minute summer	S-R13-3	33	59.503	0.153	76.1	0.1726	0.0000	OK
60 minute summer	S-R13-26	33	58.923	0.056	17.9	0.0805	0.0000	OK
60 minute summer	S-R13-27	33	58.975	0.085	26.6	0.0965	0.0000	OK
60 minute summer	S-R13-28	32	58.294	0.139	64.4	0.2461	0.0000	OK
60 minute summer	S-R13-20	33	59.049	0.099	17.9	0.1125	0.0000	OK
60 minute summer	S-R13-21	33	58.955	0.075	20.6	0.0852	0.0000	OK
60 minute summer	S-R13-22	32	59.238	0.103	39.4	0.1164	0.0000	OK
60 minute summer	S-R13-23	33	58.684	0.224	61.2	0.2530	0.0000	OK
60 minute summer	S-R13-24	33	58.494	0.243	77.7	0.3480	0.0000	OK
60 minute summer	S-R13-25	33	58.292	0.145	93.1	0.2080	0.0000	OK
60 minute summer	S-R13-29	34	58.079	0.363	175.2	0.6423	0.0000	OK
60 minute summer	S-R13-30	34	58.024	0.387	212.4	0.6837	0.0000	OK
60 minute summer	S-R13-31	35	57.979	0.357	208.5	0.6312	0.0000	OK
60 minute summer	S-R13-32	35	57.923	0.520	239.7	1.3240	0.0000	OK
60 minute summer	S-R13-15	34	58.606	0.332	187.1	0.3756	0.0000	OK
60 minute summer	S-R13-16	34	58.452	0.328	213.1	0.3711	0.0000	OK
60 minute summer	S-R13-17	34	58.300	0.451	238.5	0.5099	0.0000	SURCHARGED
60 minute summer	S-R13-18	32	59.402	0.079	24.5	0.0898	0.0000	OK
60 minute summer	S-R13-19	34	58.171	0.416	277.6	0.5955	0.0000	OK
60 minute summer	S-R13-33	35	57.901	0.601	546.3	1.5298	0.0000	OK
60 minute summer	S-R13-34	35	57.830	0.610	546.1	1.5530	0.0000	OK
60 minute summer	S-R13-35	35	57.720	0.550	546.3	1.3990	0.0000	OK
60 minute summer	S-R13-36	35	57.560	0.460	550.3	1.1702	0.0000	OK
60 minute summer	S-R13-37	1	59.005	0.000	0.0	0.0000	0.0000	OK
60 minute summer	10.000:50%	33	58.930	0.007	1.7	0.0000	0.0000	OK
60 minute summer	S-R13-38	34	58.852	0.012	1.7	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R13-1	1.000	S-R13-2	7.8	0.735	0.196	0.3655	
60 minute summer	S-R13-2	1.001	S-R13-3	53.2	1.564	0.447	0.5582	
60 minute summer	S-R13-3	1.002	S-R13-4	76.1	1.611	0.231	1.6407	
60 minute summer	S-R13-26	7.000	S-R13-28	17.8	1.492	0.033	0.2957	
60 minute summer	S-R13-27	8.000	S-R13-28	26.6	2.034	0.266	0.1548	
60 minute summer	S-R13-28	7.001	S-R13-29	65.3	1.228	0.152	2.3173	
60 minute summer	S-R13-20	5.000	S-R13-21	17.9	1.257	0.345	0.1005	
60 minute summer	S-R13-21	5.001	S-R13-23	20.6	1.320	0.244	0.2602	
60 minute summer	S-R13-22	6.000	S-R13-23	39.4	1.893	0.424	0.4291	
60 minute summer	S-R13-23	5.002	S-R13-24	61.0	1.171	0.852	1.6611	
60 minute summer	S-R13-24	5.003	S-R13-25	77.6	1.134	0.725	0.6847	
60 minute summer	S-R13-25	5.004	S-R13-29	93.1	2.327	0.156	0.2565	
60 minute summer	S-R13-29	5.005	S-R13-30	170.9	0.857	0.482	11.0710	
60 minute summer	S-R13-30	5.006	S-R13-31	208.5	1.081	0.553	1.8376	
60 minute summer	S-R13-31	5.007	S-R13-32	204.4	1.083	0.454	13.6136	
60 minute summer	S-R13-32	5.008	S-R13-33	234.1	0.717	0.381	14.5695	
60 minute summer	S-R13-15	1.007	S-R13-16	187.7	1.518	0.739	3.0177	
60 minute summer	S-R13-16	1.008	S-R13-17	213.4	1.464	0.713	4.5178	
60 minute summer	S-R13-17	1.009	S-R13-19	238.6	1.611	1.360	0.9694	
60 minute summer	S-R13-18	4.000	S-R13-19	24.5	1.938	0.260	0.6288	
60 minute summer	S-R13-19	1.010	S-R13-33	277.3	1.603	0.916	10.1423	
60 minute summer	S-R13-33	1.011	S-R13-34	542.3	1.425	0.545	4.6893	
60 minute summer	S-R13-34	1.012	S-R13-35	546.3	1.495	0.862	6.8787	
60 minute summer	S-R13-35	1.013	S-R13-36	546.2	1.733	0.860	8.2717	
60 minute summer	S-R13-36	1.014	S-R13-46	550.1	2.153	0.503	2.3817	
60 minute summer	S-R13-37	10.000	10.000:50%	0.0	0.000	0.000	0.0098	
60 minute summer	S-R13-37	10.000	S-R13-38	1.7	0.343	0.000	0.0256	
60 minute summer	S-R13-38	10.001	S-R13-39	1.7	0.322	0.001	0.2060	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R13-39	34	58.686	0.008	1.7	0.0000	0.0000	OK
60 minute summer	10.002:50%	33	58.616	0.017	6.2	0.0000	0.0000	OK
60 minute summer	S-R13-40	33	58.579	0.060	6.1	0.0000	0.0000	OK
60 minute summer	10.003:50%	33	58.474	0.066	6.6	0.0000	0.0000	OK
60 minute summer	S-R13-41	34	58.320	0.023	6.6	0.0000	0.0000	OK
60 minute summer	10.004:50%	34	58.272	0.025	8.0	0.0173	0.0000	OK
60 minute summer	S-R13-43	34	58.059	0.018	8.0	0.0000	0.0000	OK
60 minute summer	10.006:50%	34	57.952	0.022	11.0	0.0205	0.0000	OK
60 minute summer	S-R13-44	34	57.902	0.082	11.0	0.0924	0.0000	OK
60 minute summer	S-R13-45	35	57.787	0.120	11.1	0.1361	0.0000	OK
60 minute summer	S-R13-46	35	57.414	0.387	568.8	0.9851	0.0000	OK
60 minute summer	S-R13-HW1	36	57.316	0.667	568.5	0.0000	0.0000	OK
60 minute summer	S-R13-5	33	61.407	0.075	9.7	0.0846	0.0000	OK
60 minute summer	S-R13-6	33	61.366	0.121	11.3	0.1368	0.0000	OK
60 minute summer	S-R13-7	33	61.650	0.075	21.0	0.0852	0.0000	OK
60 minute summer	S-R13-8	33	61.361	0.170	32.2	0.1920	0.0000	OK
60 minute summer	S-R13-9	33	61.288	0.157	32.1	0.1773	0.0000	OK
60 minute summer	S-R13-10	33	61.106	0.086	43.9	0.0969	0.0000	OK
60 minute summer	S-R13-11	33	59.533	0.133	49.3	0.1503	0.0000	OK
60 minute summer	S-R13-12	33	59.034	0.309	160.2	0.3499	0.0000	OK
60 minute summer	S-R13-13	33	58.963	0.303	172.5	0.3429	0.0000	OK
60 minute summer	S-R13-47	36	60.837	0.137	38.7	8.6639	0.0000	OK
60 minute summer	S-R13-48	32	61.155	0.069	15.6	0.0781	0.0000	OK
60 minute summer	S-R13-49	34	60.749	0.149	48.1	0.1685	0.0000	OK
60 minute summer	S-R13-50	34	60.504	0.262	73.6	0.2965	0.0000	OK
60 minute summer	S-R13-51	34	60.315	0.205	73.6	0.2313	0.0000	OK
60 minute summer	S-R13-52	34	60.211	0.161	85.7	0.2307	0.0000	OK
60 minute summer	S-R13-53	34	59.906	0.156	94.2	0.2226	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R13-39	10.002	10.002:50%	1.7	0.257	0.000	0.0427	
60 minute summer	S-R13-39	10.002	S-R13-40	6.1	0.258	0.002	0.1564	
60 minute summer	S-R13-40	10.003	10.003:50%	6.1	0.672	0.158	0.1808	
60 minute summer	S-R13-40	10.003	S-R13-41	6.6	1.192	0.170	0.1171	
60 minute summer	S-R13-41	10.004	10.004:50%	6.6	0.481	0.002	0.1161	
60 minute summer	S-R13-41	10.004	S-R13-42	8.0	0.602	0.003	0.1130	
60 minute summer	S-R13-43	10.006	10.006:50%	8.0	0.713	0.002	0.0683	
60 minute summer	S-R13-43	10.006	S-R13-44	11.0	0.325	0.002	0.2218	
60 minute summer	S-R13-44	10.007	S-R13-45	11.1	0.877	0.528	0.1377	
60 minute summer	S-R13-45	10.008	S-R13-46	11.0	0.803	0.945	0.1255	
60 minute summer	S-R13-46	1.015	S-R13-HW1	568.5	1.729	0.422	10.1863	
60 minute summer	S-R13-HW1	Flow through Pond	S-R13-HW3	432.7	0.116	0.002	860.2313	
60 minute summer	S-R13-5	2.000	S-R13-6	9.7	0.646	0.242	0.2425	
60 minute summer	S-R13-6	2.001	S-R13-8	11.2	0.440	0.281	0.2468	
60 minute summer	S-R13-7	3.000	S-R13-8	21.0	0.976	0.244	0.3093	
60 minute summer	S-R13-8	2.002	S-R13-9	32.1	1.039	0.772	0.2884	
60 minute summer	S-R13-9	2.003	S-R13-10	31.9	1.471	0.802	0.4077	
60 minute summer	S-R13-10	2.004	S-R13-11	43.9	2.295	0.311	0.4252	
60 minute summer	S-R13-11	2.005	S-R13-12	49.0	2.128	0.570	0.3813	
60 minute summer	S-R13-12	1.004	S-R13-13	160.0	1.392	0.473	0.6839	
60 minute summer	S-R13-13	1.005	S-R13-14	172.1	1.548	0.688	3.2350	
60 minute summer	S-R13-47	11.000	S-R13-49	29.5	0.925	0.384	0.6845	
60 minute summer	S-R13-48	12.000_1	S-R13-49	15.6	1.546	0.191	0.1748	
60 minute summer	S-R13-49	11.001	S-R13-50	47.8	0.947	0.505	2.4611	
60 minute summer	S-R13-50	11.002	S-R13-51	73.6	1.233	1.019	0.7920	
60 minute summer	S-R13-51	11.003	S-R13-52	73.6	1.384	0.556	0.7261	
60 minute summer	S-R13-52	11.004	S-R13-53	85.7	1.938	0.328	0.7788	
60 minute summer	S-R13-53	11.005	S-R13-54	94.2	2.351	0.262	0.3121	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R13-54	34	59.639	0.139	110.0	0.1992	0.0000	OK
60 minute summer	S-R13-55	34	59.144	0.244	114.1	0.3496	0.0000	OK
60 minute summer	S-R13-56	33	59.397	0.167	32.0	0.1885	0.0000	OK
60 minute summer	S-R13-57	33	59.114	0.094	42.9	0.1060	0.0000	OK
60 minute summer	S-R13-58	34	59.035	0.235	155.5	0.3361	0.0000	OK
60 minute summer	S-R13-59	34	58.782	0.232	166.8	0.3326	0.0000	OK
60 minute summer	S-R13-60	34	58.235	0.244	177.8	0.3492	0.0000	OK
60 minute summer	S-R13-61	34	57.452	0.252	206.1	0.3608	0.0000	OK
60 minute summer	S-R13-62	34	57.348	0.548	237.5	0.7844	0.0000	SURCHARGED
360 minute winter	S-R13-HW2	360	57.223	0.573	49.6	0.0000	0.0000	OK
360 minute winter	S-R13-HW3	360	57.207	0.707	90.6	0.0000	0.0000	SURCHARGED
360 minute winter	S-R13-64	360	57.201	0.831	20.2	1.4682	0.0000	SURCHARGED
240 minute summer	S-R13-HW4	124	56.318	0.066	14.0	0.0000	0.0000	OK
60 minute summer	S-R13-4	33	59.142	0.152	99.3	0.2180	0.0000	OK
60 minute summer	S-R13-14	33	58.777	0.292	184.5	0.4174	0.0000	OK
60 minute summer	S-R13-42	34	58.217	0.021	8.0	0.0000	0.0000	OK
60 minute summer	S-R13-30A	33	58.380	0.067	14.8	0.0753	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R13-54	11.006	S-R13-55	110.1	1.943	0.275	0.8540	
60 minute summer	S-R13-55	11.007	S-R13-58	114.3	1.549	0.549	0.6868	
60 minute summer	S-R13-56	12.000	S-R13-57	32.0	1.079	0.784	0.2871	
60 minute summer	S-R13-57	13.001	S-R13-58	42.9	0.955	0.140	0.4429	
60 minute summer	S-R13-58	11.008	S-R13-59	155.8	2.160	0.539	0.8672	
60 minute summer	S-R13-59	11.009	S-R13-60	167.2	2.265	0.633	2.3757	
60 minute summer	S-R13-60	11.010	S-R13-61	178.3	2.462	0.689	3.1085	
60 minute summer	S-R13-61	11.011	S-R13-62	206.0	1.572	0.447	2.4686	
60 minute summer	S-R13-62	11.012	S-R13-HW2	237.4	1.499	0.921	3.7280	
60 minute summer	S-R13-HW2	Flow through Pond	S-R13-HW3	432.7	0.116	0.002	860.2313	
60 minute summer	S-R13-HW3	14.000	S-R13-64	26.5	0.784	0.380	0.2876	
240 minute summer	S-R13-64	14.001	S-R13-HW4	14.0	1.381	0.191	0.0604	352.1
60 minute summer	S-R13-4	1.003	S-R13-12	99.5	1.216	0.195	0.8713	
60 minute summer	S-R13-14	1.006	S-R13-15	183.6	1.574	0.581	2.5843	
60 minute summer	S-R13-42	10.005	S-R13-43	8.0	0.723	0.002	0.1532	
60 minute summer	S-R13-30A	9.000	S-R13-30	14.8	1.314	0.101	0.1943	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R13-1	35	60.881	0.924	14.6	1.0450	0.0000	SURCHARGED
60 minute summer	S-R13-2	35	60.859	1.171	96.4	1.3243	0.0000	SURCHARGED
60 minute summer	S-R13-3	35	60.735	1.385	127.8	1.5665	0.0000	FLOOD RISK
60 minute summer	S-R13-26	33	58.941	0.074	32.5	0.1065	0.0000	OK
60 minute summer	S-R13-27	33	59.013	0.123	48.4	0.1390	0.0000	OK
60 minute summer	S-R13-28	35	58.867	0.712	117.4	1.2584	0.0000	SURCHARGED
60 minute summer	S-R13-20	35	59.322	0.372	32.6	0.4202	0.0000	SURCHARGED
60 minute summer	S-R13-21	35	59.289	0.409	37.3	0.4621	0.0000	SURCHARGED
60 minute summer	S-R13-22	35	59.558	0.423	71.6	0.4783	0.0000	SURCHARGED
60 minute summer	S-R13-23	35	59.221	0.761	108.3	0.8603	0.0000	SURCHARGED
60 minute summer	S-R13-24	35	58.936	0.685	138.8	0.9806	0.0000	SURCHARGED
60 minute summer	S-R13-25	35	58.872	0.725	168.1	1.0369	0.0000	SURCHARGED
60 minute summer	S-R13-29	35	58.840	1.124	309.2	1.9862	0.0000	SURCHARGED
60 minute summer	S-R13-30	35	58.780	1.143	329.9	2.0193	0.0000	SURCHARGED
60 minute summer	S-R13-31	35	58.747	1.125	329.3	1.9875	0.0000	SURCHARGED
60 minute summer	S-R13-32	35	58.651	1.248	393.2	3.1762	0.0000	SURCHARGED
60 minute summer	S-R13-15	35	60.049	1.775	280.3	2.0071	0.0000	SURCHARGED
60 minute summer	S-R13-16	35	59.784	1.660	320.9	1.8771	0.0000	SURCHARGED
60 minute summer	S-R13-17	35	59.358	1.509	362.6	1.7071	0.0000	SURCHARGED
60 minute summer	S-R13-18	35	59.444	0.121	44.5	0.1366	0.0000	OK
60 minute summer	S-R13-19	35	59.141	1.386	428.1	1.9833	0.0000	SURCHARGED
60 minute summer	S-R13-33	35	58.594	1.294	878.1	3.2920	0.0000	SURCHARGED
60 minute summer	S-R13-34	35	58.433	1.213	881.1	3.0879	0.0000	SURCHARGED
60 minute summer	S-R13-35	35	58.238	1.068	880.5	2.7180	0.0000	SURCHARGED
60 minute summer	S-R13-36	35	58.005	0.905	887.0	2.3044	0.0000	SURCHARGED
60 minute summer	S-R13-37	1	59.005	0.000	0.0	0.0000	0.0000	OK
60 minute summer	10.000:50%	33	58.933	0.011	3.2	0.0000	0.0000	OK
60 minute summer	S-R13-38	33	58.857	0.017	3.2	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R13-1	1.000	S-R13-2	14.5	0.738	0.365	1.3095	
60 minute summer	S-R13-2	1.001	S-R13-3	88.4	1.733	0.742	1.1549	
60 minute summer	S-R13-3	1.002	S-R13-4	127.1	1.733	0.386	5.5005	
60 minute summer	S-R13-26	7.000	S-R13-28	32.5	1.449	0.061	2.0623	
60 minute summer	S-R13-27	8.000	S-R13-28	48.6	2.332	0.485	0.3623	
60 minute summer	S-R13-28	7.001	S-R13-29	115.6	1.225	0.270	7.9712	
60 minute summer	S-R13-20	5.000	S-R13-21	32.3	1.418	0.622	0.2800	
60 minute summer	S-R13-21	5.001	S-R13-23	36.0	1.315	0.427	0.5244	
60 minute summer	S-R13-22	6.000	S-R13-23	70.4	1.886	0.756	0.7513	
60 minute summer	S-R13-23	5.002	S-R13-24	108.4	1.539	1.512	2.2478	
60 minute summer	S-R13-24	5.003	S-R13-25	139.9	1.399	1.307	1.1045	
60 minute summer	S-R13-25	5.004	S-R13-29	163.1	2.327	0.273	0.9584	
60 minute summer	S-R13-29	5.005	S-R13-30	265.6	0.910	0.749	19.4021	
60 minute summer	S-R13-30	5.006	S-R13-31	329.3	1.128	0.873	3.2614	
60 minute summer	S-R13-31	5.007	S-R13-32	329.0	1.073	0.730	22.0234	
60 minute summer	S-R13-32	5.008	S-R13-33	389.7	0.886	0.635	18.2104	
60 minute summer	S-R13-15	1.007	S-R13-16	282.2	1.781	1.111	3.8361	
60 minute summer	S-R13-16	1.008	S-R13-17	320.3	2.022	1.070	5.0730	
60 minute summer	S-R13-17	1.009	S-R13-19	360.9	2.278	2.057	1.0651	
60 minute summer	S-R13-18	4.000	S-R13-19	44.2	2.011	0.468	1.1918	
60 minute summer	S-R13-19	1.010	S-R13-33	423.9	1.962	1.400	12.6634	
60 minute summer	S-R13-33	1.011	S-R13-34	874.2	1.986	0.878	5.4170	
60 minute summer	S-R13-34	1.012	S-R13-35	880.5	2.001	1.389	8.2989	
60 minute summer	S-R13-35	1.013	S-R13-36	879.6	1.999	1.385	11.5783	
60 minute summer	S-R13-36	1.014	S-R13-46	886.0	2.154	0.809	4.0940	
60 minute summer	S-R13-37	10.000	10.000:50%	0.0	0.000	0.000	0.0145	
60 minute summer	S-R13-37	10.000	S-R13-38	3.2	0.426	0.001	0.0380	
60 minute summer	S-R13-38	10.001	S-R13-39	3.2	0.407	0.001	0.3044	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R13-39	34	58.690	0.012	3.2	0.0000	0.0000	OK
60 minute summer	10.002:50%	33	58.623	0.025	11.2	0.0000	0.0000	OK
60 minute summer	S-R13-40	33	58.601	0.082	11.2	0.0000	0.0000	OK
60 minute summer	10.003:50%	33	58.496	0.088	12.0	0.0000	0.0000	OK
60 minute summer	S-R13-41	34	58.329	0.032	12.0	0.0000	0.0000	OK
60 minute summer	10.004:50%	34	58.282	0.036	14.6	0.0345	0.0000	OK
60 minute summer	S-R13-43	34	58.067	0.026	14.7	0.0000	0.0000	OK
60 minute summer	10.006:50%	37	58.033	0.102	20.1	0.4450	0.0000	OK
60 minute summer	S-R13-44	39	58.016	0.196	78.8	0.2214	0.0000	FLOOD RISK
60 minute summer	S-R13-45	36	57.933	0.266	16.7	0.3007	0.0000	SURCHARGED
60 minute summer	S-R13-46	35	57.855	0.828	914.0	2.1077	0.0000	SURCHARGED
480 minute winter	S-R13-HW1	480	57.687	1.037	161.6	0.0000	0.0000	OK
60 minute summer	S-R13-5	36	61.745	0.413	17.6	0.4670	0.0000	SURCHARGED
60 minute summer	S-R13-6	36	61.732	0.487	19.6	0.5511	0.0000	SURCHARGED
60 minute summer	S-R13-7	36	61.767	0.192	38.2	0.2171	0.0000	OK
60 minute summer	S-R13-8	36	61.719	0.528	56.2	0.5971	0.0000	SURCHARGED
60 minute summer	S-R13-9	36	61.609	0.478	55.0	0.5402	0.0000	SURCHARGED
60 minute summer	S-R13-10	35	61.421	0.401	75.9	0.4539	0.0000	SURCHARGED
60 minute summer	S-R13-11	35	61.023	1.623	81.8	1.8354	0.0000	SURCHARGED
60 minute summer	S-R13-12	35	60.631	1.906	243.4	2.1560	0.0000	SURCHARGED
60 minute summer	S-R13-13	35	60.541	1.881	260.9	2.1275	0.0000	SURCHARGED
60 minute summer	S-R13-47	37	60.924	0.224	70.4	22.8734	0.0000	OK
60 minute summer	S-R13-48	33	61.177	0.091	28.4	0.1027	0.0000	OK
60 minute summer	S-R13-49	34	60.906	0.306	76.8	0.3464	0.0000	SURCHARGED
60 minute summer	S-R13-50	35	60.778	0.536	118.1	0.6062	0.0000	SURCHARGED
60 minute summer	S-R13-51	35	60.639	0.529	118.1	0.5980	0.0000	SURCHARGED
60 minute summer	S-R13-52	35	60.591	0.541	139.5	0.7748	0.0000	SURCHARGED
60 minute summer	S-R13-53	35	60.508	0.758	154.6	1.0850	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R13-39	10.002	10.002:50%	3.2	0.319	0.001	0.0631	
60 minute summer	S-R13-39	10.002	S-R13-40	11.2	0.318	0.003	0.2345	
60 minute summer	S-R13-40	10.003	10.003:50%	11.1	0.810	0.288	0.2734	
60 minute summer	S-R13-40	10.003	S-R13-41	12.0	1.415	0.310	0.1775	
60 minute summer	S-R13-41	10.004	10.004:50%	12.0	0.590	0.004	0.1728	
60 minute summer	S-R13-41	10.004	S-R13-42	14.7	0.742	0.005	0.1677	
60 minute summer	S-R13-43	10.006	10.006:50%	14.7	0.844	0.003	0.2892	
60 minute summer	S-R13-43	10.006	S-R13-44	78.8	0.629	0.016	0.8081	
60 minute summer	S-R13-44	10.007	S-R13-45	16.7	0.949	0.798	0.1945	
60 minute summer	S-R13-45	10.008	S-R13-46	17.9	1.022	1.541	0.1625	
60 minute summer	S-R13-46	1.015	S-R13-HW1	913.1	2.075	0.678	14.0029	
60 minute summer	S-R13-HW1	Flow through Pond	S-R13-HW3	692.8	0.138	0.003	1589.5178	
60 minute summer	S-R13-5	2.000	S-R13-6	16.7	0.646	0.418	0.5801	
60 minute summer	S-R13-6	2.001	S-R13-8	19.2	0.495	0.483	0.3644	
60 minute summer	S-R13-7	3.000	S-R13-8	37.4	1.091	0.435	0.5359	
60 minute summer	S-R13-8	2.002	S-R13-9	55.0	1.383	1.324	0.3720	
60 minute summer	S-R13-9	2.003	S-R13-10	54.1	1.571	1.357	0.7474	
60 minute summer	S-R13-10	2.004	S-R13-11	72.1	2.444	0.510	0.8840	
60 minute summer	S-R13-11	2.005	S-R13-12	83.9	2.162	0.975	0.6578	
60 minute summer	S-R13-12	1.004	S-R13-13	239.2	1.510	0.708	0.9431	
60 minute summer	S-R13-13	1.005	S-R13-14	256.7	1.620	1.026	4.6115	
60 minute summer	S-R13-47	11.000	S-R13-49	55.8	1.125	0.726	1.3043	
60 minute summer	S-R13-48	12.000_1	S-R13-49	28.4	1.587	0.346	0.4505	
60 minute summer	S-R13-49	11.001	S-R13-50	78.4	1.150	0.828	3.4591	
60 minute summer	S-R13-50	11.002	S-R13-51	118.1	1.681	1.635	0.9416	
60 minute summer	S-R13-51	11.003	S-R13-52	116.4	1.516	0.879	1.5010	
60 minute summer	S-R13-52	11.004	S-R13-53	138.2	2.064	0.528	1.9426	
60 minute summer	S-R13-53	11.005	S-R13-54	149.2	2.432	0.414	0.8568	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S-R13-54	35	60.442	0.942	179.3	1.3486	0.0000	SURCHARGED
60 minute summer	S-R13-55	35	60.303	1.403	174.8	2.0075	0.0000	FLOOD RISK
60 minute summer	S-R13-56	35	60.342	1.112	58.1	1.2579	0.0000	FLOOD RISK
60 minute summer	S-R13-57	35	60.208	1.188	72.9	1.3439	0.0000	FLOOD RISK
60 minute summer	S-R13-58	35	60.188	1.388	230.0	1.9860	0.0000	FLOOD RISK
60 minute summer	S-R13-59	35	59.917	1.367	246.8	1.9564	0.0000	SURCHARGED
60 minute summer	S-R13-60	35	59.286	1.295	264.5	1.8537	0.0000	SURCHARGED
60 minute summer	S-R13-61	35	58.370	1.170	310.9	1.6736	0.0000	SURCHARGED
60 minute summer	S-R13-62	35	58.087	1.287	367.0	1.8418	0.0000	SURCHARGED
60 minute summer	S-R13-HW2	35	57.722	1.073	365.9	0.0000	0.0000	OK
480 minute winter	S-R13-HW3	480	57.657	1.157	122.7	0.0000	0.0000	SURCHARGED
480 minute winter	S-R13-64	480	57.651	1.281	20.1	2.2634	0.0000	SURCHARGED
240 minute winter	S-R13-HW4	100	56.318	0.066	14.0	0.0000	0.0000	OK
60 minute summer	S-R13-4	35	60.677	1.687	167.0	2.4148	0.0000	SURCHARGED
60 minute summer	S-R13-14	35	60.288	1.803	278.1	2.5804	0.0000	SURCHARGED
60 minute summer	S-R13-42	34	58.226	0.030	14.7	0.0000	0.0000	OK
60 minute summer	S-R13-30A	35	58.792	0.479	26.9	0.5413	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S-R13-54	11.006	S-R13-55	167.5	1.981	0.418	1.6639	
60 minute summer	S-R13-55	11.007	S-R13-58	174.8	1.626	0.839	1.0194	
60 minute summer	S-R13-56	12.000	S-R13-57	54.1	1.369	1.327	0.3853	
60 minute summer	S-R13-57	13.001	S-R13-58	68.6	1.009	0.224	1.0401	
60 minute summer	S-R13-58	11.008	S-R13-59	229.1	2.211	0.792	1.3254	
60 minute summer	S-R13-59	11.009	S-R13-60	247.2	2.311	0.936	3.5497	
60 minute summer	S-R13-60	11.010	S-R13-61	264.8	2.446	1.023	4.7345	
60 minute summer	S-R13-61	11.011	S-R13-62	310.5	1.960	0.674	3.1312	
60 minute summer	S-R13-62	11.012	S-R13-HW2	365.9	2.310	1.420	3.7280	
60 minute summer	S-R13-HW2	Flow through Pond	S-R13-HW3	692.8	0.138	0.003	1589.5178	
60 minute summer	S-R13-HW3	14.000	S-R13-64	27.2	0.764	0.389	0.2876	
240 minute winter	S-R13-64	14.001	S-R13-HW4	14.0	1.381	0.191	0.0604	342.2
60 minute summer	S-R13-4	1.003	S-R13-12	152.8	1.253	0.299	1.6900	
60 minute summer	S-R13-14	1.006	S-R13-15	275.1	1.736	0.871	3.5032	
60 minute summer	S-R13-42	10.005	S-R13-43	14.7	0.892	0.004	0.2270	
60 minute summer	S-R13-30A	9.000	S-R13-30	26.7	1.461	0.182	1.2149	